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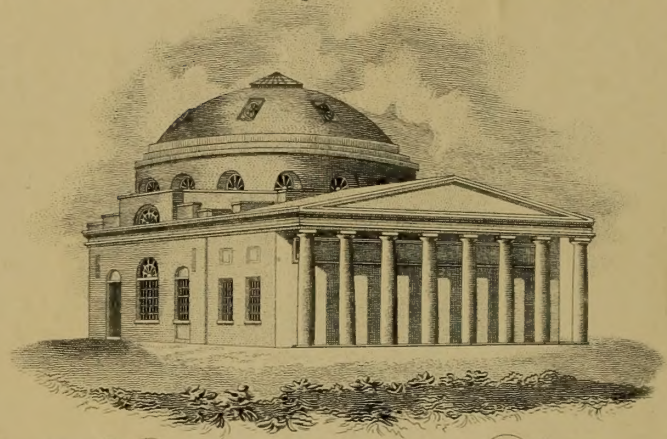

University of Maryland

Md.
Coll.

University of Maryland Theses

Early Doctor of Medicine and Doctor of Physic Dissertations with Corrected Tables of Contents

These manuscripts described as either an Inaugural Dissertation or an Inaugural Essay were presented to the University of Maryland for the Degree of Doctor of Medicine and/or Doctor of Physic during the years 1813-1887. The individual dissertations were bound together during the 1940's. The original tables of contents for the bound volumes contained multiple errors in authors' names, titles, and/or years. To address these errors, an additional "Corrected Table of Contents" has been inserted at the beginning of each volume.

The project team who investigated and corrected the tables of contents were Richard J. Behles, Historical Librarian/Preservation Officer; María Milagros Pinkas, Metadata Management Librarian; Angela Cochrane and Carol Harling-Henry, Resources Division; Sarah Hovde, Abra Schnur and Megan Wolff, Services Division.

These dissertations were digitized in 2011-2012 and are available at the UM Digital Archive (archive.hshsl.umaryland.edu) and the Internet Archive (www.archive.org).

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1 Partially faded. Ink bleeds. Text lost in binding.
2 Ink bleeds. Text lost in binding

HSHSL 2011 for the UM Digital Archive. Sources consulted for corrections: Original Dissertation; University of Maryland Medical Faculty, Matriculation List, 1821-1851; Cordell, Eugene F. "University of Maryland, 1807-1907" (New York : The Lewis Publishing Company, 1907), Volume 2.

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[3] Partially faded. Ink bleeds.

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UNIVERSITY OF MARYLAND

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(1) Bound out of order. Title page, dedication and p.1 of text here.

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(2) Bound out of order. Title page, Dedication and page 1 are after the Dissertation by Maxwell.

An

Inaugural Dissertation

on

Phthisis Pulmonalis:

Submitted to the Examination of R. B. Taney, Esq. Pr

and the

Trustees and Faculty of Physick

of the

University of Maryland:

for the Degree of

Doctor in Medicine;

By

James Watters

of

Baltimore.

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1833

1852

Dedication.

To
The gentlemen of the Faculty of Physick
of the University of Maryland.

Gentlemen,

In addition to the gratification which the act affords me, — the highest I can experience, there is a peculiar propriety in my dedicating to you the following lines.

Conscious as I am of the numerous defects of this my first essay on a medical subject, it is with the most profound deference I now lay it at your feet: but I do it encouraged by the reflection that parental connivance at its defects, in you it will only meet: and this consideration alone has, hitherto buoyed up my mind amid those waves of discouragement, with which some of you are aware I have had to contend.

Its parents therefore I do and ever shall regard you: Whatsoever my future lot in life may be cast, rest assured your respective names are indelibly written in my most grateful remembrance.

Venerable men! yours is the angelic task of drying the Widows tears - of lighting up joy & gladness in the countenance of a fond but fearing father. Upon you I bestow! May each of you go down to the grave "in a good old age"; "as a shock of corn cometh in its season." And finally when all the "pains of life shall be over" may you together be admitted to that healthful clime where the inhabitant "shall not say I am sick".

So prays

your ever affect. Servt.

The Author.

Phthisis Pulmonalis

The proposition — "had no sin ever existed, no suffering should ever have been experienced," seems to be just. Hence if we argue "a posteriori" i. e. from effect to cause, we must admit that sin has been committed and hence the introduction of suffering, and of the true "Pandora box" into our World. A retributive Providence seems very manifest also in apportioning the magnitude & multitude of the sufferings to the magnitude & multitude of the sins of men. It is conspicuous also in rendering, very often, the offending, the suffering member.

Altho' the diseases to which mankind are liable are almost innumerable, yet the selection of one for a "Medical Thesis" has been to me matter of much perplexity owing to a consciousness of my inability to do it even common justice. One excellence however I am resolved it shall possess (and seriously doubt whether it possess any other) — it shall "in toto" be my own. —

In discussing this subject we shall notice in the order mentioned, 1st The Symptoms; 2nd The causes; 3rd The treatment & 4th The Prophylaxis of Phthisis Pulmonalis.

If the term φθίσις from φθεω Tabesco, to consume or corrupt, be the origin of the name of this disease it implys its effects rather than its character. The same may be said — if it be derived from, πτυω Spuo, to spit.

This disease makes its attack in the most insidious manner: and from whatever cause its distinguishing sym-

ptoms are ordinarily present. The slight cough is at first but occasional, and as it often for a length of remits, yields commonly no alarm. But eventually it becomes more habitual, and becomes associated with a frothy mucus. Now the breathing, especially on exercise, becomes more than ordinarily hurried: and also unusually laborious. Languor, loss of appetite & dejection of spirits, also prevail. At length, emaciation, and an expectoration of blood-streaked mucus yield alarm. Patient lies easiest on one side or perhaps on the back. These symptoms become gradually more & more aggravated, accompanied with two exacerbations daily, the former ordinarily occurring at noon, the latter at midnight. Colliquative night sweats and diarrhea now set in & in the course of some time render the Patient "a walking skeleton" But fortunately for him, hope, "the balm of human life," lingers with him even to the last- yea until in perhaps a few hours delirium carries him quickly off "the stage of action" or life ebbs out gradually, to last.

Having briefly noticed the symptoms we are now to specify the causes of this disease.

Although Hæmoptysis is not always yet it is frequently the cause of Phthisis. The vessels of the lungs, as of the nose, may heal by the first intention" as we say, yet we can readily conceive of a quantity of blood remaining & stagnating in the pan-

-ifications of the Bronchia, irritating and exceting ulceration - but where this result occurs that the patient has been predisposed is very presumable.

2. Extraneous substances as dust of mills, filings of metals also occasionly induce Phthisis but ordinarily thro the instrumentality of Asthma.

3. Suppuration as a sequel of Pneumonia is also an occasional cause of this disease. Here an abcess, or as it is commonly termed One or more Vomicæ are formed, commonly in that part of the Pleura investing the lungs. On the surface of the lungs if tubercles exist they are more exposed to the vicissitudes of the atmospheric air, than those deep seated. Hence it is very probable that where Phthisis results from this cause tubercles had previously existed. Where the constitution is good and free from such predisposition, the pus discharged will be expectorated and the parts healed. Hence it is the journals of the day announce the cures of so many phthisical patients and of the most confirmed kind - in which pus had been so "freely expectorated."

4 Catarrh, if frequent or violent is often a cause of Phthisis. But as a mere Catarrh it cannot excite it, it must first form Bronchites from the inflammation travelling down to the lungs from the -

Schneiderian membrane. Here we are unhappily found "at issue" with the justly celebrated Cullen, who we find declaring – "It is to me very probable that a catarrh is very seldom the foundation of Phthisis." That cold is only the ordinarily exciting cause of this disease cannot be denied: but it may & indeed should be considered the sole cause, acting as it does in inducing the fore-mentioned causes of Phthisis, first causing Pneumonia, & tho' Pneumonia [occasionally] Phthisis Pulmonalis.

To what cause beside, can the dreadful havoc made annually in Great-Britain be ascribed? "In that country alone" says Dr. J. Johnson of London, "Pulmonary consumption alone is computed to carry off fifty-five thousand British subjects annually, or one between one fifth & one sixth of the whole mortality." Should it hereunto be objected that "those subjects were scrophulous," we confront the assertion with the declaration of that Physician "I believe", says he, the remote cause to be a scrophulous taint, or nascent tubercles of the lungs: but I believe in four cases out of five, these tubercles are excited into inflammation & suppuration, by the effects of climate & principally by oft repeated & neglected colds. If therefore" [he continues] "Scrophula itself has been called into

action, by climate, the whole class of pulmonary complaints, may then be referred directly or indirectly to atmospherical transitions." Indeed a moments cool reflection will result in the corroboration of the above-mentioned argument. For the British are, collectively taken, men of the most robust stamina - and expanded thorax: nothing, therefore can account for the above mortality but their cold & ever-varying climate, the atmosphere of which is ever surcharged with hydrometic vapour. A number even of my own school-mates have fallen by this sly Archer, whose parents altho' now old are yet alive. But even granting that many of the forementioned victims had been predisposed or under the influence of "incipient tubercles" if Dr Johnson's reasoning be correct these tubercles in more equable climes would never have been called into action, & of course ~~[illegible]~~ vicissitudes of atmosphere have been the true causes of that dread mortality - The point "quod erat demonstrandum"

In confirmation of the above the suffrage of our Judicious professor "of the Theory & Practice of Medicine" is both full & strong - viz: "Cold is the cause of more cases of consumption than all other causes united."

5th. But of all the causes yet noticed, Tubercles are confessedly the most frequent.

They are no doubt often congenital; but according to the supposition of some of our best authorities they may also be subsequently acquired. The doctrine of predisposition is, by some, treated with ridicule: but it is indisputably proved by Matter of fact. We see almost daily the child possessing not only the same form of person but (what is still more difficult to account for) the same temperament of mind as one or both of its parents. The analogy is very strong in regard to the corporeal appearance especially recognising as we sometimes do the child by its father. If then the father possessed scrofulous lungs we think there is nothing contrary to sound Pathology in supposing the son will possess them also.

These tubercles are at first small and indolent: not larger than millet seed & hence called "milliary tubercles". They are, at first colorless; but on excitement they inflame, enlarge and become of a yellow color & of a cheesy consistence. They afterward, together with the adjacent parts, indurate, and where in contact, unite, and if cut, the mass presents a polished surface, which is impervious to the air. These masses or tubercles eventually suppurate, and if seated in

in the substance of the lung will discharge itself into the bronchial ramifications. If large in quantity it may induce strangulation and instant death. But it is ordinarily expectorated; leaving a tubercular cavity behind. In some cases the sides of these cavities have been found united by cellular adhesions or by structure similar to fibro-cartilage which forms a cicatrix in which different structures often exist.

No healthy granulations however are deposited; the parts exhibit the characteristic scrophulous aspect.

Wherever, therefore, the individual possesses a fair skin, blue eyes, thick upper lip, long neck, rosy complexion & flat thorax, there is found the legitimate subject of the forementioned process, or what is technically called "predisposition"

Many exanthematous diseases and repelled eruptions are also said to be occasional causes of Phthisis: but as these are the result of entirely neglected, or of partially treated, diseases, we shall not take any farther notice of them.

Having specified the most common causes of Phthisis, we now, as was proposed, pass on to their treatment.

Whether it be referable to the present, imperfect state of the healing art, or to the absolutely incura

ble nature of the disease, is a question, but it is a lamentable fact, that to a great extent, at least, this disease still continues to be classed among those of the "opprobria Medicorum." Even a glance at the ephemeral remedies of the last century, then so extolled now so abandoned, substantiates this lamentable truth. Where is now the fame of Digitalis? - of Hydrogen gas? of prussic acid? Of tar water? of its vapour, together with that of Nitric acid? They have all alike evaporated into air, - "thin air."

The most natural division of the treatment is perhaps into that in which *predisposition does not, and that into which it does exist.

When the patient is not scrophulous the disease is much more under the influence of medicine than in the latter case.

I. When excited by pneumonia or reiterated colds, the disease is commonly, especially in the onset, of an inflammatory character, and then the lancet should be freely used: debility at this period should not be so much dreaded as it ordinarily is; every judicious Physician will studiously endeavour to save his patient from inflammation and suppuration of the lungs by taking off the mischievous effects of the "vis a tergo"

The probable cause of the present prejudice that exists against bloodletting in this disease is, the physician is rarely called in till the

*For the sake of arrangement I have used the word "predisposition" in a wide sense comprising its ordinary import together with Malconformation.

the period of bleeding is perhaps forever gone; & suppuration has commenced. It is true bloodletting must be sparing, but generally should be frequent.

"The sportings of nature should here, as elsewhere, be carefully marked; she is often a good, tho' never an infallible guide. She should therefore be followed when right and corrected when wrong. It is now pretty generally remarked that Hemorrhoids, when of the bleeding kind, together with the "Menses" and "Fistula in Ano" arrest the progress of Phthisis. If so, the "desideratum" is to ascertain the principle on which they act. Their uniformity in voiding† blood seems to be that principle. Nature's directions herein should be attended to - & the judicious Physician be led to go & do likewise - to use the Lancet moderately & frequently.

"The subjects of this species of Phthisis being ordinarily men who are inured to hard labour, they should be kept at that of the most active kind. Riding on horseback and remaining in a dry warm climate especially during the Winter season are both very promising. The former especially, if care be taken

† "Menstrual discharge tho' destitute of the qualities of pure blood, does certainly lessen the sanguiferous volume.

taken to prevent the vicissitudes of the air to which such persons are necessarily exposed.

If the disease result from mal-conformation of the thorax, sawing wood, or what perhaps has more mechanical effect in expanding the thorax,-using a flail is promising employment.

Seatons & Issues are old, but good remedies, their use is now superseded by blisters: when these latter are employed, they should be small & applied to different parts.

Diet should be bland and nutritious. Intemperance in the use of meat and drink studiously avoided: early rising and early retirement are equally important.

A fleecy clothing should be uninterruptedly worn: for this purpose flannel is, perhaps, the best. Of medicines, those calculated to keep up perspiration, as the antimonials and lessen the heart's action, as Digitalis, are the most promising. —

A host of other means and of other medicines might here be noticed; but they are such as will not justify much reliance, should those mentioned prove unavailing. —

II. We are now come to notice the treatment of that species of Phthisis which results from predisposition.

Here we commonly find the delicate male or female with emaciated body, hectic flush, accelerated pulse, streaked spit &c. Here what is termed active treatment is inadmissible: the abstraction of blood, to any considerable extent would very probably accelerate the patient to a more early death. Gestation on horseback or on foot cannot perhaps be long endured. If so that of a slow-drawn carriage on a smooth road will be proper.

But in such a case a voyage to sea and remaining in a mild, equable and warm climate is the most flattering means with which we are yet acquainted. Should it be enquired, How do these means so beneficially act? we reply as follows, Altho' the benefit of sailing has been ascribed to the purity of the air, we are pretty confident it is not just: we conceive it more justly attributable to the following circumstances 1st. The air is more equable at sea: 2nd. The nausea it never fails to excite in most persons, acts on the cutaneous exhalents (just as does the abstraction of blood) and thereby

keeps up a free, insensible perspiration; nor is this so slow and inefficient a means of lessening arterial action as is commonly supposed: indeed if we are to judge of it by its effects, we must allow it to be a means of considerable efficacy.

3. It is supposed (and I think very correctly) that a chronic, congested state of the liver by pressure and irritation against the Diaphragm & lungs, may induce ulceration thereof & consequently pulmonary consumption. In such a case, a sea voyage has been found exceedingly serviceable, by emulging the liver (the source of irritation) by nausea & especially by vomiting.

If practicable patients predisposed should make a permanent residence in a dry, equable clime, or imitate our birds of passage and on the winter's approach, flee towards such a place. The "modus operandi" thereof must be similar to the above: In such a clime the cutaneous exhalant vessels are more active and thereby lessen the circulating volume.

Matter of fact daily shews the power of the mental, on the corporeal faculties, in all voyages and journies therefore, an amusing, agreeable companion, should, if possible, be obtained.

At this period of the disease and in this species tonic medicines are often indicated Did the far-famed & justly-famed, Peruvian bark or any of its preparations really possess the anti-febrile virtues so univocally everywhere assigned to it, its efficacy here should be very great—but we find it rather injurious than otherwise.

Iodine and its preparations are more promising and so is prussic acid.

The same form of regimen, and directions as to clothing, as those in the former species, are here also to be attended to.

Cold or Warm baths are doubtful remedies. they are rarely serviceable, and when there is any considerable action in the pulse may be injurious.

Where the disease is of a confirmed nature, & if especially from predisposition, the above-mentioned remedies and indeed all the medicines of the "Materia Medica" will be found unavailing.

As the "dernier resort" the best is opium.

It is said to alleviate pain, mitigate the cough, moderate the diarrhœa & when hope itself, is ready to expire, disarms the Monster of his Terror." To all those appointed

to die" of this disease it may most emphatically be termed the "magnum Dei donum".

In reference to prophylaxis we are now to treat. It has already been asserted that "Piles", "fistula in ano" "Menses" &c. have, pro tempore, arrested the progress of Phthisis: to these we shall add "Marsh Miasmata" Its "modus operandi" seems rather obscure: on it therefore we shall bestow a few remarks. Its influence has been ascribed to the supposed fact, that two different predispositions cannot exist in the system at the same time. This is very questionable: we conceive every organ may have its predisposition, but no organ two predispositions at the same time. Hence it is in this, as in some other forms of disease, that the weaker yields to the stronger affection.

Finally, it is truly lamentable to observe thro' the whole stages of this disease the heartrending sight presented to the parent and the disappointing hopes which to the last spring up in every hectic breast. Whether the delicate organization which predisposes to to this disease contributes to amiability of temper and sweetness of disposition is a question: certain however it is that this illusive disease falls, in general, on the best as well as on the loveliest part of the Creation.

Baltimore, March 2nd 1833.

1827

An inaugural essay

upon

Bilious Remittent Fever

By

J. A. Buchanan

To Ashton Alexander M.D.

Dear Sir,

As a small proof of the high estimation entertained for your Medical acquirement, as well as of the deep sense of gratitude which I feel, and shall always cherish, for the uniform kindness bestowed, I take the liberty to dedicate to you, this my first essay; whilst fully sensible, as well of the weakness of the effort, as of the many erroneous ideas which it may advance. I flatter myself that the motive will recommend it to your clemency; in this hope I remain

Dear Sir,

your grateful pupil,

J. A. Buchanan.

Nothing but an acquiescence with the laws of the University could induce me at this early period of my Medical career to intrude my ideas upon a subject which I am fully aware requires a Masterly hand to treat in a manner worthy of its importance; the necessity of the case while I hope plead for me whilst I endeavour briefly (yet in as lucid a Manner as my abilities will permit) to show the Cause and Symptoms of Bilious Remittent-Fever which I have chosen as the theme of my first efforts.

In the sequel of these Observations I will place the remedies employed in the most common and successful practice.

The cause of this disease has been attributed to the operation of a certain poison to which has been given the name of Miasma, supposed to

originate from the decomposition of putrefact
of vegetable matter.-
This opinion is strongly supported by the auth
of some of the most intelligent Medical men
If we consider the season of the year in wh
this Disease generally, the situation of the
countries in which it most frequently appears, &
the peculiarity of the climate to which it
most properly belongs, or if I may be allowed
the expression, of which it is a native, this
opinion will be placed almost beyond a doub
of the exact nature of the poison we are as
yet uninformed, but of its operation on
the System, & its Consequences we are perm
to say something definite.-
There are I believe but two theories which a
the present day distract Medical men upo
the Modus Operandi of this poison on the
body, one supposes the Miasma to be enta
in the Sputa and in the act of deglutit

conveyed to the Stomach where it makes its impr
ion and by sympathy is propagated to every
part of the body, the other, that it is inhaled
and conveyed to the lungs where it acts also
by sympathy.

It is the latter of these opinions I shall adopt
not only as the one most generally received, but
in my opinion, as the most rational, for as this
poison is opined to be floating in the atmosphere
it seems natural to suppose we inspire it
with the air we breathe and in which it exists.

In giving the symptoms of this disorder it is
not to be expected, I shall enumerate all
that appear in the different forms or types
it is sufficient to mention the most common
those which generally characterize it.
A paroxism, or regular fit of remittent is
divided into three stages.

In the first, the most striking symptom is
a sense of cold or shivering, it is therefore

called the Cold Stage.
In the Second, there is an evident increase of temperature or feeling of heat, it is consequently termed the hot Stage.
In the third and last there is a copious Secretion by the Skin, this is therefore called the Sweating Stage.
At the commencement of the paroxism the patient is observed to yawn frequently and shiver, a general langour pervades the System, the face assumes a pallid hue and the Skin over the body appears constricted as if cold had been applied to it.
The patient is not always sensible of chilliness at the commencement of these Symptoms, tho his Skin feels cold to another person, in a short time however he begins to complain, which he sometimes does from the beginning.
This sensation of cold is in most instances referred at first to the back, a trembling succeeds commencing in the lower jaw, & gradually spread

over the body —
the pulse during the cold stage is small, frequent
compressible & often irregular, the respiration consi-
derably affected, it is frequent anxious & accompanied
with sighing, loss of appetite, nausea, & sometimes
vomiting of bilious matter, pain in the stomach
and bowels, headache, with a sense of heaviness or
soreness in the joints and an indisposition
to any exertion are the characteristics of
this stage —
These symptoms decreasing the second or hot
stage commences, the cold after alternating
with short fits of heat, gradually abates and
more permanent heat is at length diffused
over the body; instead of the paleness of the
face & constriction of the skin which attend
the cold stage, the face becomes red, the skin
dry, the patient still suffers from pain in
the head, anxiety & restlessness, the respiration
continues to be frequent, but fuller & more free

the pulse more regular, hard & full, the tongue c
furred and tinged yellow, these symptoms are
at length succeeded by a profuse sweat
which forms the last or sweating stage of the
paroxysm, during which the strength and
frequency of the pulse are diminished and
the heathing is free.
If the fever be an intermittent the patient is left
apparently without fever, though not restored to
health for I believe he is never well until
a complete crisis is formed.
If a remittent the symptoms of the hot stage,
though with an evident abatement continue and
a recurrence of exascerbation which is regulated
by the type of the fever.
The tendency of intermittents to become continued
is always unfavourable, on the contrary the progno
is good when they change from a less to a more c
intermittent form.
By the alvine discharges not having the colour which
the bile always imparts to them when it is secreted in
proper quantity and in a healthy state, & the symptoms
of the disorder remaining during the discolouration of

e forces and subsiding and at length disappearing
s they return to their natural condition, it is evident
this disorder there is a deranged action of the secre-
y vessels of the liver, in consequence of which the
cretory vessels is either deficient in quantity or
orbid in quality."
It appears then, that the liver is the principal seat
the disorder, and is generally found in a congested
te & in a physconious or infarcted condition.
y a congested state I wish to be understood as alluding
the blood vessels & to the vena portæ, particularly
is congestion of the veins may I think be attributed
arlly to the infarcted condition of the parenchyma-
s substance of the liver and partly to the interrupted
tion of its secreting vessels.-
this opinion I am supported not only by what
ks place in other parts of the body, but by what
ppens in the liver itself, on an increased secretory
tion.-
we look at inflammatory affections of the trachea &
ces, to which this state of the liver certainly bears
alogy, (at least as far as increased secretion has
tendency to lessen ingesta & remove congestion) we
all find by administering medicines which promote

the secretory action of the vessels of these parts. They are greatly relieved & the inflammation subdued; & we then turn our attention to the condition of the liver after an increased vitiated secretion. Cholera Morbus, Diarrhoea &c we shall I think be disposed to admit depleting effects of secretion & vice versa.-

Though this state of the liver resembles an inflammatory affection in some points, yet it differs essentially from it, in many important particulars, for it must be remembered in an inflammation of the liver, it is the arterial system that is affected and the secretory function of this organ being carried on by a distant class or order of vessels, partakes secondarily in its effects, whereas, a venous congestion of the liver is produced by an interruption in its secretory action together with an infarcted condition of its parenchymatous substance, the arterial system is consequently affected but in a secondary manner the state of congestion being limited to the vena porta-

To remove these morbid, but dissimilar states, the treatment it is evident must be necessarily different.

The inflamation of the liver must be ma-

ed in all respects as an inflammation in any
ther part, from which it differs neither in its cause
nature: not so in a disordered function of that
ran from the operation of marsh poison
ere the principal object is to remove the in
action and restore healthy secretion
unless we eradicate the cause effectually we
ake no durable impression on the patient is
t secure
st I should be accused of assuming too much in
y pathological views on this subject I would
stance the state of the portal system in cases
ascites proceeding from neglected intermittent
rather remittent for as I have already hinted
ere is strictly speaking no intermittent fever.
will be found in almost every instance of as=
ites arising from remittent fevers, or where the
iver has not been sufficiently purged (if the
xpression be allowed) the condition of that
gan is a state of inaction or congestion
; it not only shown by dissections, but by the
appy termination of those cases of remittents

in which due attention has been paid to the evacuation of the liver & the beneficial effects of those remedies calculated to remove paran=ma in cases of ascites, from improperly treat remittents -

That it is not a point assumed then, that the liver is in a state of conjection and infarcti or has a tendency to this last condition, I am disposed to think will be granted by most im=partial men and even if it should not appe that a state of infarction actually exists in remittent fevers, I still contend for a disposit to a conjested state of the vessels of the liver a parabysmic condition of its parenchymatou substance, either of which points out a cour of treatment & demands our attention

In the treatments of this disease two objects indicated, the first is to remove the cold stage when present, the second to correct disordered state of the liver by removing or if you please preventing the infarctio

that viscus, with the congested state of the venæ
tæ.—

It is not my intention to enter into a dis
sion on the modus operandi of mercury, whether
has or has not any specific action on the liver
el no great difficulty in admitting it has, if it
granted that antimony exerts an influence on
e skin, Cantharides on the kidneys & bladder, Spe
uanha on the stomach, aloes on the rectum, why
uld not mercury act on the liver?
operation in this disease however may be as
ll explained without attributing to it any ten-
ncy to act particularly on the liver, when it is
ollected the power it exerts over the absorbent
d secreting vessels as is demonstrated in
causing to be removed the pus in Hypopyum
effusion in Leucoma and on the lungs
d its capability of increasing the action
the secreting vessels of the skin and kid
ys why should it not remove the infarcted
ate of the liver and increase its secretion

by a general action?

When we bear in mind too that the liver is the seat of disorder, and is the weakest & most inelastic part and from a known law in the animal economy is consequently most effected by our remedies, it seems to me to require no great effort of the mind to see why the liver should be most acted upon. (in the same way that a blister may remove an inflammation of the lungs though applied to the feet) without attributing to the mercurial any particular disposition to act upon the viscera.

I have already declined embarking in any speculation on the modus operandi of mercury in liver complaints, whether its action be particular or general, the high source from which the latter opinion emanates & which denies to it any particular virtue, though opposed by a host of equally respectable medical men, would make me pause before I would [illegible] to attribute to it virtues which it might or might not possess; fortunately however in a practice

int of view it is of little importance as the espousers
both these opinions unite in advocating its
lity in the disease which is the subject of
present attention.
administering the different preparations of mercury
which I believe sub mur Hydrar, is the most eli-
le it is necessary to bear in mind that its proper
tion being to correct the state of the liver, it is
so usefully employed if given as a purge:
e doses of this medicine should therefore precede
ne hours the employment of any other cathartic
it appears to be more serviceable when allowed
continue in the stomach, & from the observation
those gentlemen who treat of chronic biliary
lections & who have had an opportunity of
serving the operation of this medicine, it seems
se diseases are more relieved by means that
rect the disordered secretion, than by evacua-
s from the bowels, for the complaint is often as
re after copious evacuations as it was previous
on the contrary there is in many cases, a mark

ed improvement after the exhibition of a dose
the mild muriate before any evacua
has taken place; a small dose of this medi
cine taken at a proper time procuring
better than any of those remedies that are
the highest estimation for their anodyne
and narcotic effects.
I think it however necessary to qualify the
observations as I believe in all fevers the pro
=city of evacuating the circulating contents
the bowels is indicated and in no disease
more strongly than in those of the head and
liver, for it may readily be believed that ma
secretions and indigested matter in the pri
viæ may prove an irritant to the bowels & by
sympathy to other parts; independently of the
Cathartics promote the discharge of the exha
arteries of the bowels & by taking off the mech
=cal obstruction of the fæces in this way not
only permit a free circulation, but dimi
ish plethora.
In ordinary cases a dose of 10 or 15 grains of the sub

...hydrar. every 12 or 15 hours in 4 or 5 grains in com...
...nation with as much pulv. Antim. every two hours for
...just 24 will be sufficient which for the reason
...ready assigned, and as the mercury will by
...is time have made its impression, be followed
... an aperient of some of the neutral salts
...lox oil, or a combination of Cremor Tartar &
...asp.

...ticular attention should be paid to
... appearance of the evacuations either by the
...ysician himself or the attendants on the
...tient, for this will greatly assist in forming
... opinion of the state of the liver and the impres
... of our remedies.

...all febrile disorders attended with heat & dry-
... of the skin diaphoretics of the saline & anti
...nial kind may be advantageously exhibited
...d when we consider the important function
...e skin and how great an emunctory we
... easily perceive what an auxiliary it
...y become in reducing febrile action.

among the most eligible of the febrifuge medicin
I should class the Nit Pot. The antimonial prepar
-tions, Spiritus Mindereri Carb or Super Carb Sodæ
mixed with lemon juice and taken in a State
effervescence. Spt. Nit. Dul taken separately
combined with Vin Antim, or a combination of
Nitre & Tart Antim. or when there is much i
-tability and jacitation unaccompanied wit
high arterial action. Pulv Doveri. might be a
-vantageously exhibited
When the thirst is distressing which it often
I should by no means imitate those practitione
who withhold drink & allow none but the st
-lating diaphoretic kind on the contrary I look up
it as calculated to harass the patient. I should
therefore allow him to drink moderately of lepe
toast-water & weak lemonade or any other bever
not calculated to excite the action of the heart
To the subject of Blood letting in this disease,
General rule can be laid down as in every ca
certain variations occur which require judgm
and observation, much therefore must be alway

e discretion of the practitioner —
would appear as action always fatigues, if we could
more strength by bleeding & thus lessening the
tion of the heart, than we lose by the loss of
d, no doubt would arise upon the propriety of
practice, but we should deceive ourselves by
l reasoning, for if no viceral disorganization
to be apprehended strength never could be
d by blood letting as the morbid action is
a consequence of the condition of the blood
rather the state of the blood ~~the~~ result of
bid action —
let us allow for an instant the state of the
d is cause of excitement it would be difficult
pply a remedy in as much as we could not
tract the inquinated & leave the healthy & by
tracting both nothing would be gained as
aking off the support of the system we render
ss competent to resist the poison to which
be justly referred both the excitement of the heart
state of the fluids — however
must be always remembered there are organs.

essential to life as the brain and lungs. There be
the excitement of the heart may become involved
against which catastrophe it will be prudent to
guard, and as in gonorrhoea and gonorrhoeal
ophthalmitis diseases arising from a peculiar
poison, there is always more or less phlegmonous
inflammation accompanying them, so in this dise
as we have reason to apprehend the liver may
be similarly affected, it will be judicious to ob
the consequences of high arterial action on tha
viscus.-

The long contest about the proper period of exhib
tonics among which bark is the best I believ
this time settled, & it is now generally admitt
the most eligible time is during the apyrex
or when any marked remission of all symptom
of fever shall have taken place. Though instan
do now & then occur of such extreme exhaustio
it will be found necessary to support over na
with stimulants even though he shall not be w
fever.

These means will I think be found sufficient to

move most attacks of this disease for I am
clined to believe "we rather want judgment
precision in the application of old remedies
than stand in any need of the introduction
new ones & with the poet should say

Be not the first by whom the new is tried
Nor yet the last to lay the old aside."

An
Inaugural Dissertation
On
Bilious Remittent Fever
Submitted to the examination of
The Right Revd Jos. Kemp D.D.
And To The
Trustees & Faculty of Physic
of the
University of Maryland, for the
degree of Doctor of Medicine
James A. Buchanan of
Maryland
April 22nd 18

Dissertatio

De mentis effectibus in procreando,

extenuando et medendo morbum:

Praefecti, Curatorum, Facultatisque

Medicae Academiae Marylandiae,

Inquisitioni, pro gradu medicinae doctoris

submissa:

Martii die octavo, Anno Domini milesimo

octingentesimo trigesimo secundo:

Jacobo B. McKee

Marylandiae

1832

Josepho Martin M D

S.

Tuis sub auspiciis mi domine carissi=
=me; in principia scientiae medicinae fui
Inductus. Tua solicitudo ad accellerandum
in scientiae acquisitione progressum, sapo=
=rem pro medica investigatione primum imper=
tivit; et tibi pro doctrina quam assecutus
sum et sine qua minime scripta haec dis=
sertatio fuisset, multum devincior
Tibi, igitur, qui me in consiliis tantum adjuvisti
quorum de exitu spes meae fortasse pendent,
manuscriptum hoc dedco, de re quam ad
recte tractandam, ingenio meliori quam meo
opus esset.

Haec occasio animum, propter benifi=
cium tuum, gratum, et admirationem eru=
ditionis tuae testandi, crede mihi, gloriae vo=
luptatique est

Tui observantissimo

Jac.^s B. McKee

Dissertatio.

Ingenii ostentationi nullum est argumentum quod licentiam ampliorem poscebat; et eodem tempore, nullum obscuritatis labyrinthis plus involutum quam mens humana. Philosopho themata investigationis fertile omnibus aetatibus fuit. Locke, Bacon, aliaeumque quorum spiritus emanationes illuminare hominum animas tum de hac re tenebrosas multum contribuerunt, tempus ingeniumque in explorandis mysteriis ejus abditis fuerunt exercita. Post indagationem operosissimam, ad consequentia, ut definita, vulgo accepta, comprobataque perventum est. Ita tanquam multa alia mysteria, diu in naturae arcanis involuta, rapidus constansque intilectus humani gradus hoc evolvit et nostro conspectui exposuit, quod quidem scriptor praemium nobilissimae hominis occupationis denominavit: nempe, scientiam mentis humanae, utpote connexae cum structurâ humani corporis complicatâ tamen concordanti. Cerebrum, organum tenerum et sensu acutissimo, inclusum defensumque ab iis

ossibus, vulgo denominatis cranii ossibus, sedem esse mentis, nunc conceditur, cui sicut centro communi omnis sensatio pervehitur et ibi percipitur. Sic sensuum instrumento variorum, eas causas externas quae valetudini ministrant, ab iis quae nocent et cum sana ratione mentis corporisque sunt insociabiles, discernere licet. Inter sensorium commune, ut dicitur, aliasque humani corporis partes firma existit et intima. Esse aliquod similitudinis informationis non dicere volo; sed medium communicationis, facere ea, proxima relatione, participes in humani corporis constructione, egregie accommodatum.

Principium hoc, igitur, tractans, hic denominabo communicationum nervosam, vel sensûs transmissionem ad centrum magnum, cerebrum: mutuam inter se partium fiduciam, perturbationemque in qua altera quum fit morbida alteram involvere potest, demonstrabo. Nervis tam exquisitus tactus sensus est, ut vulnus leve angorem gravissimum excitabit. Sed argumentum necesse est assumere, de quo speciatim disserere volo.

Sensus omnes nostri, quum morbo perculsi et vice versa, vim morbosam vel salubrem, secundum impressionem acceptam et pro suâ communicationis facilitate vel morbi conditione in parte primum affecta, uter-de utroque et corpore toto, exercent. Partem omnem in una compositione implicari passe, ex hoc constat. In presentia, tamen, mentis actionem in excitando et repellendo impetum nasicum, vel verbis cæteris, ejus effectu in procreando et meandi morbum, considerabo.

Connexio intima et pene individua inter animum materiemque, paucissimis (statuitate, exempli gratiâ exceptis, impetum malum ab alio acceptum jam-lobus in conditione sana non existentibus) alteri translatum in, clare illustrat. Utrumque, utpote alterius conscium particeps quo, ab ea primum affecto, anus removere conjuncto conatur. Hinc illis etiam fortuito observantibus, sanitatem unius necessariam esse ei alterius satis apparet; et veritatem accuratiorem quo verborum meorum quotidianus usus medici exercitati testari

potest. Quoties in ratione vitae vulgari, conditionum rerum huic similem spectamus! nonne videmus ut impedimenta parva comparite, et levia pecuniaria, exempli gratiâ, quorumdam vitam contrahere crebro valent; praecipue si cum his sint conjunctae causae noxiae aliae quas pene semper gignunt. Hae habeo testimonium certum, principiis accuratis argumentum stare. Et eos ita considerans, vel sanitate vel morbo, mutuo officii probandi causâ sic me rem habere, documenta aliquot proferam.

Hominem vini haustu leniter incitatum contemplemur. Stomachi nervos primo corripiens, illine ab his transmissionis chordis per partes corporis omnes pervehitur, et ejus affectus cito apparent. Calor lenis tum persentitur, mens fit exhilarata, et ideae suae clariores et multo majis acutae: musculi effectum ad illos pervenisse, mentis actione testari possunt. Neque vascula sanguinea sunt exempta, sed aeque cum caeteris commoventur. Aucto cum impetu sanguis

a cordis latere sinistro propellitur, et ad peragendum officium constitutum urgetur.

Spectem, in multis conditionibus morbosis corpus involvere posse, procul dubio, hoc temporis esse credo. Si valetudinaria visamus aliaque loca curae et auxilio eorum quas infirmatas seu infortunium invasit, sepasita; quot, rebus suis quaesitis auditisque, invenimus quorum malus praesens casus, actioni mentis fortunâ infelici laborantis, solum, attribuendus est. Passus intersingulos, personae varii, commisserationem moventes, conspectui efferuntur. Hic spectantes, faciem pallidam, macram cadaverosamque unius cujus forma macie confecta et titubans casum miserabilem bene satis suspicionit, intuemur: illine spectaculum severa luctuosum hypochondriacus alia mentis morbo laborantis victima, oculas in se convertit. Haec multis cum aliis quae proferri possent doloris amplitudinem humani et miseriae, quae mens procreare valet, demonstrare, quamvis imperfecte, sufficiunt. Quodcunque, ait Dr. Potter cujus opinione, multum

honoris debetur /" debilitatem inducere tendit, tendit etiam excitabilitatem augere; aut, verbis aliis, sic corpus disponit, ut nocentium actio causarum multa facilior reddatur, et necessario id majis obnoxium morbi incursui vastationique facit. His pro certis acceptis, et cognito, quasdam esse mentis conditiones quae debilitatem utcunque obliquam gignunt, statim constat, quod nemo est qui neget, mentem in procreando morbum saepe valere.
Aliquot morborum, in quibus mens saepe multum implicatur, enumerare nunc conabor. Nulla est aegritudo, quae, ut mihi videtur, actione mentis est primo inducta tam frequenter quam Dyspepsia. Longa atque variata notarum turba, quae comitatur hunc intollerandum praecipue facit morborum omnium quibus homo subjectus esse potest. Cum, attamen simul cum notis diris omnibus, quoties testimonium haud dubitandum habuimus maerorem, sollicitudinem atque molestiam genuisse — Icterus etiam a mente interdum oritur. Part impetum irae vehementem flavum colorem super totam corporis superficiem

inducere homines fuerant inventi: cujus exem-
pla plura quam unum memoriae sunt prodita.
Hic, stimulatoris officia in hepate fungi videtur,
ducens auctam bilis secretionem quae in circu-
latione, ut ego puto, recepta, tum per cutem totam est
diffusa. Hypochondriis, quoque, toto in catalogo mor-
borum terribilissimus masimeque letifer, magnis
subitisque animi perturbationibus, ut gravi et vio-
violenti irâ, vel, de contrario, laetitiâ subito impro-
visoque communicatâ, saepe procreatur. Totum
stimulatur corpus: Cor-, simul cum caeteris sentiens
impulsum, sanguinem cum impetu iterata, ad
cerebrum propellit; quod rerum statum ad [illegible]-
generationem hujus horrifici periculosi que morbi
adaptatum facit. De mentis efficacia in pro-
creandis morbis, plus dici posset; sed exempla
quae jamdudem prolata fuerunt, probare quod
in parte prima thesis propassui, satis esse ju-
dico. Nunc repellendis, exterminendis medendisque
morbis potentiam ejus animadvertam.
Genus humanum periculis impedimentisque

undique circumdatur. Principia noscia se constanter exercent, semper parata tanquam hostis vigilans, partem infirmissimam et minime defensam adoriri. Sed ut obsesi, salutis anxii, ad depellendum hostem invadentum rationes moliuntur; sic leges quae animali oeconomiae praesident, tempore periculi, sunt ipsae vigiles. Vim repellentem intelligo, in corpore inhaerentem, quam vim medicatricem hic denominabo, et cui mens quum operam conferens firme conjuncta esse dicatur. Hanc, autem, ut seorsum agentem suisque viribus innitantem, tractare malo; et in hoc aspectu spectantes potentiam salutarem exercere inveniemus. Mentem cum noxiis principiis illis quae jamdudem memoravi, prospere congressam esse ne omnino dubito. Ea in conditione quae causarum morbosarum operatione favet, vidilicet debillitate, aliquid leniter stimulans vires corporis prostratas supra potestatem illarum Elevaret.

Hoc afficere mens interdum potest, et vi sua morbo venienti occurrit. Habere quoque exetenuandi facultatem, nemo est quin affirmet.

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Hoc afficere mens interdum potest, et vi sua morbo venienti occurrit. Habere quoque extenuandi facultatem, nemo est quin affirmet.

In morbis quibus aegrotus ex debilitate multum patitur, animum habere quam plurimum erectum, optimum semper existimatur: et si non sic excitare possimus ut illum stimulet praeter tere tamen animi maerorem ex quo effectus contrarius perniciosus que oriatur, nitimur.

Postremo; mens in medendo morbo multum valet; quod ad probandum, nullo exemplo clariore opus est quam aegroti cujus credulitas persuaderi potest, et in quem impressio, nostris accommodata consiliis facta est: exitus prosper, ex hac ortus, mirandus est. Fiducia sana medico curanti, seu fides fanatica et potentia gubernantis et supremi Dei valetudinem rursum renovaret, hoc ipsum efficit; cum si ille animum despandisset, et imaginatio sua eventum diversum concepisset, fortasse e lecto ne omnino assurrexisset: quod pristinum proverbium natum facit, Imaginatio et occidere et sanum reddere valet.

An Essay

on

Cow-pox as a preventive of Small-pox

by

Charles Worley Parker

of Elkton, Maryland.

1824

The discovery of a remedy for the preventions of so loathsome and fatal a disease as that of small pox, may justly be ranked among the first in any age and in any science. In the preservations of human life, and in the alleviations of human suffering, this discovery stands unrivalled, and is justly entitled to be placed at the head of that long list of discoveries of which the medical profession can boast.

Previous to its being known that Cow pox was a preventive of small pox, the practice of preparing the system and inoculating with the small pox prevailed, but this was but a choice of evils, as the small pox communicated in this way was still a dangerous disease, as will appear on reference to the bills of mortality in any of our large cities previous to the introductions of vaccination. In the Lond. Med. and Surg. Trans. Vol x. P. 326, it is stated that from 1804 to 1818, twenty three thousand

one hundread and thirty four lives have been saved in London by vaccination, compared with effects of inoculation in the preceding fifteen years."

And in the New York Med. Rep. New series vol 1 P. 200, it is stated that formerly two thousand persons died annually in London of small pox; in 1812, such was the effect of vaccination, that the deaths were only seven hundread and fifty, although the population had increased within two years 133-139."

It is not certainly known where the practice of inoculation first commenced. It has been ascribed to the Circassians who employed it as a means of preserving the beauty of their women. Mungo Park in his travels in the interior of Africa, found that inoculation had been practised on the Guinea Coast.

For the introduction of the practice into England we are, it is believed, indebted to Lady Mary Wortley Montague, whose son was inoculated in Constantinople during her residence there,

and whose infant daughter was the first who underwent the operation in England, about the year 1721; and the Royal Family submitting to the operation in 1726, the practice of inoculation prevailed from that period to the time of the discovery of the preventive powers of the Cow pox by Dr. Jenner. The genuine Cow pox is a disease which appears on the teats of the Cow, in the form of vesicles, of a bluish colour, approaching to livid. These vesicles have an elevated margin, and are depressed in the Centre; and are surrounded with an inflamed circle or areola. The fluids which they contain is limpid. The animals appear languid and feverish; and the secretion of Milk is diminished. The fluids contained in these vesicles when applied to parts in the human subject destitute of cuticle, or to parts where this covering is abbraded, produces a disease possessing the same specific and diagnostic Characters,

hence, dairy maids are particularly exposed to it. There is also a spurious Cow pox, or infective modification of the true Cow pox, incapable of preserving against small pox, which was the source of much ~~embarrassment~~ difficulty to Dr. Jenner, in his researches after the prophylactic powers, of the true disease; nor were his difficulties removed, untill he made himself master of the diagnostic characters of the two diseases. In the spurious, the vesicles are less uniformly circular: "fluids not limpid, "frequently purulent; with little or no central depression. "These are the diagnostic symptoms as it exists in the Cow, and are equally applicable when it is transmitted to the human system. In inoculated Cow pox "from genuine virus, the progress of the disease is given by Dr Good in his Study of Medicine 2nd Am. Ed. P 396, is as "follows—"

"The puncture disappears soon after the insertion of the lancet: but on the third day a minute inflamed spot becomes visible. This gradually increases in size, hardens, and produces a small circular tumour, slightly elevated above the level of the skin. About the sixth day, the centre of the tumour shows a discoloured speck, augments in size, and becomes a manifest vesicle, which continues to fill, and to be distended till the tenth day: at which time it displays in perfection the peculiar features which distinguish it from the inoculated variolus pustule. Its shape is circular, sometimes a little oval: but the margin is always well defined, and never rough or jagged; the centre dips instead of being prominent, and is less elevated than the circumference.

About the eighth day, when the vesicle is compleatly formed, the disease exhibits some thing of a constitutional influence: the arm bit is painful, and there is perhaps a slight head ache, shivering, lassitude, loss of appetite, and increase of pulse, this may continue in a grater or less degree, for one or two days, but always subsides spontaniously, without leaving any unpleasant consequences. During the general indisposition the vesicle in the arm becomes surrounded with a circular inflamed halo or areola, about an inch or an inch and a half in diameter, which is the pathognomic proof of constitutional affection, how slightly soever the internal symptoms may shew themselves. After this period, the fluids in the vesicle gradually dries up: the surrounding blush becomes fainter, and in a day or two dies imperceptibly:

so that it is seldom to be distinguished beyond the thirteenth day from inoculation.

At this time the vesicle hardens into a thick scab, of a brown or mahogany colour: and if not separated antecedently by violence or accident, falls off spontaneously in about a fortnight, leaving the skin beneath perfectly sound and uninjured. The entire progress of the inoculation scarcely opens a door to any medical treatment whatever. No preparatory steps are called for, as in small pox: and all that can be necessary is a dose or two of some aperient medicine if the Constitutional indisposition should be severe or troublesome." From 1798 untill 1813 or 14. the reputation of the Cow pox, as a preventive of small pox, steadily and constantly advanced in the estimation of all classes of people, and so firmly was it established, that the few cases of small pox which did, from time to time, arise in those who had been vaccinated, were attributed

to the patients not having had the true vaccine disease, and not to any doubt of its perfect and entire prophylactic powers.

We are informed in the Edin: Med. and Surg. Journal, Vol for 1820 Dr. that Adams of Forfar in Scotland in 1813–14 observed and described one hundread and fifty Cases of small pox presenting some peculiar phenomena, as having occured after perfect vaccination. It was noticed in the Isle of Man in 1817, and in England and various parts of the Continent in 1818– From the general mildness of most of its symptoms, Compared with those of the small pox in the unvaccinated, it was called the varioloid, but it was then believed, as it is now, to be the same disease as it appeared to be in the vaccinated and unvaccinated, differing only in degree, hence the propriety of calling it modified small pox, That it is nothing more than

a modification of small pox, is established by the fact, that the matter taken from the pustules on those who have had the vaccine disease, will produce small pox in those who have not been vaccinated, and the matter taken from the pustules of those who have not had it, will produce the modified form of the disease in those who have been vaccinated. These facts are established by Sir Gilbert Blane, and are also noticed in Thomas' Practice. The proportion of those who have had the cow pox, and are afterwards susceptible of small pox, it is not easy to ascertain" of 46. 662 persons who have been vaccinated by the English vaccine Establishment, only five of whom are reported to have had small pox in any form." Jour. For. Med.

Mr Cross of England, who kept a register of cases at Norwich, of whom ninety one had been vaccinated; of which number three only had small pox.

and they the mild form of the disease. Hence it would appear that the proportion of those who are not protected from small pox, even in its modified shape, to those who are, is but small, and that it is not calculated materially to impair ~~materially to impair~~ our belief in the value of vaccination as a preventive of small pox.

Why vaccination should be a preventive in some cases, and not in all, is a problem more easily stated then solved. It is known that small pox itself does not always distroy the susceptibility to a subsequent attack, and it has been asserted that some are obnoxious to it at every successive exposure to its contagion.

As a general rule the vaccine disease should be viewed as constituting a certain and complete exemption, and those cases in which it fails in being so, should be ascribed to the influence of other diseases, or to peculiar habit or constitutional idiosyncrasies

modifying and impairing its Force. It is an opin-
-ion which generally prevails among the people, that
the influence of vaccination over the system is
impaired by time, and that the insusceptability to
the influence of small pox contagion, is only to be
preserved by repeted vaccination; and there being
something magical in the number seven, seven years
is the period assigned by them, during which it
is to be relied on; and consequently that vaccina
-tion should be repeated every seven years. The
fallacy of this opinion it is hardly necessary to
controvert, as I am not aware of its having been
sustained by any member of the Faculty. But
if it were necessary, facts could adduced to
prove that its preventive influence is not impa-
-ired by time- I will, however, having a case in point,
give it- My Preceptor, who was vaccinated seven-
-ty seven years ago, does at this time (having patients
with small pox) as he has frequently done before in
the discharge of his professional duties, expose

himself with impunity to the variolus contagion.
Having pointed out those features in true cow pox,
by which it can be distinguished from the infec-
-tive & spurious kind, I shall now endeavour to give
a succinct account of the characteristic symptoms
of small pox, as it appears in those who have not undergone
-the vaccine disease, and in those who have. Small
pox commences with the usual signs of a febrile
cold fit. About the third or fourth day an
eruption resembling flea bites, appears on the face,
-neck and breast; and successively over every part
of the body. The face is much more covered than any part of the body,
so much so, that the proportion is recon-
-ed four to one. On the appearance of the eruption
there is generally an abatement of the fever.
The head, face, and hands gradually swell, and
the eye lids are often so much swollen as to close
the eyes. The spaces between the pimples are red-
-dish and the fever is of the inflamatory kind, and
suppuration is generally completed about the eighth day.

About the eleventh day the inflamation and pustules begin to abate, and the latter dry away by degrees and scale off by the fourteenth or fifteenth day. The extent of the eruption is in proportion to the violence of the eruptive fever. The pimples being few in number in those cases where the fever is mild, and numerous where it is violent. The eruption appears on all parts to which the air has access, external and internal; hence the soarness and swelling of the throat, increased secretion of saliva, cough, expectoration and dyphnoa &c are common in all severe cases, particularly if they partake of the confluent variety. When the swelling of the face declines it is common for the hands and feet to swell, which is considered a favourable symptom:

Such is the usual course of the distinct variety of this disease, It would be difficult however to draw the line of seperation between the severer cases of the distinct, and the milder cases of the

confluent varieties, running as they sometimes do, into each other by insensible degrees.
In the Confluent, the eruptive fever is higher, and the eruption at first assumes the appearance of a general efflorescence, without any distinctive points; innumerable pimples make their appearance about the third, being a day or two ealier than in the distinct variety. These soon coalese, and become filled with a yellowish serum, as this variety seldom suppurates regularly.
The fever is apt to assume a low type, and instead of subsiding on the appearance of the eruption, as in the distinct variety, very generally increases, attended with coma and delirium.
The increased secretion of the saliva and soreness of the mouth and fauces are troublesome.
About the eighth day the pustules break, and extensive dark or brown scabs are formed, which are very fetid. About this time too, the fever

undergoes considerable exacerbation, called secondary fever, and is a periods of great danger to the patient. If he survive, the swelling of the face, about the tenth or eleventh day, abates. and that of the extremities commences.

It is a disease attended with much danger, and one of hideous aspect. It was formerly one of the greatest scourges of mankind. It is estimated that one in six, of all who take it in the casual way dies. A mortality scarcely less than that of the plague. There is some slight resemblence between the distinct variety and chicken pox; and in the mildness of the symptoms, a still greater resemblence, perhaps, between modified small pox and chicken pox. There is however, one symptom which would not escape the most casual observer, and is completly characteristic viz- In small pox the pustule invariably presents a depressed centre. The eruption in chicken pox

is purely vesicular; and if the vesicle be punc-
-tured its sides collapse and fall to a level
of the surrounding parts. When small pox
occures after perfect vaccination, the initia-
-tory symptoms are sometimes pretty severe, and
resemble the eruptive fever in symptoms and
duration of the common distinct variety of the
same disease. But on the appearance of the erup-
-tion the fever generally terminates. The eruption
runs its course with great rapidity, the pus-
-tules rarely exceeding the fifth day before they
have begun to turn, and the lymph contained
in them appears to dry and fall off without
the intervention of pus, leaving the face marked
for some time after with small brown shots,
but without pits.

All authority on the subject goes to show that it
is not only as safe, but a very mild disease;
and one of comparatively rare occurance. But

if it occured more frequently, or, indeed, if vaccination had no preventive powers whatever, and had no other effect than that of modifying small pox, and disarming it of its malignancy and danger, it would notwithstanding, be an inestimable blessing to mankind. It is one of the established rules in the doctrine of cow pox, that it cannot be ~~received~~ communicated to the same individual more than once, but in the present state of our information regarding its diagnostic character, there appear to be some exceptions to this rule, and they are, perhaps, about as numerous as modified small pox after apparently perfect vaccination- Hence, it appears probable, that the susceptibility of the system to the influence of small pox contagion is not entirely destroyed, except in those cases in which the susceptibility to the influence of cow pox is also destroyed. Should my conjectures prove to be well founded, subsequent vaccination will be the best test of the preventive influence of previous vaccination. I would, therefore, recommend that in all cases it be repeated until the system shall be no longer susceptible to its influence.—

An

Inaugural Dissertation

on

Pneumonia

Submitted to the examination

of the

Revd. James Kemp D.D. Provost

and the

Regents of the University of Maryland

For the Degree of Doctr. Medicine

by

William T. Munnikhuysen

of

Baltimore County

Maryland

1826

To

John B Davidge. A. M.. M D.

This Dissertation

is most respectfully

dedicated

by his friend and Pupil

William J. Munnikhuysen

— Pneumonia is a disease of
frequent occurence, and from the dangerous types
it often assumes, the investigation of its history
and most proper mode of treatment is of
primary importance to the Medical practitioner.
It may occur at any season of the year, but it
prevails to the greatest extent during the Spring
months, and during some seasons it rages Epidemi-
cally through a large tract of country proving
extremely fatal in its effects —
The symptoms of this disease are few in number
and though most of them singly are observed to
take place in other diseases yet taken collectively
they characterize it so strongly that it is almost
impossible for the well informed practitioner to
mistake it. — Dr Cullen defines this disease,
Pyrexia, dolor in quadam parte thoracis, respiratio
difficilis et tussis and places it among the phleg-
masiæ. — The febrile symptoms generally show

themselves before the local ones, but occasional
the latter are the first experienced. The cold
age is generally strongly marked in some instan-
a severe chill ushers in the hot stage – The state
the pulse and skin vary according to the characte
the disease, and afford to the practitioner a clue
its proper treatment. The febrile symptoms if
t precede or accompanied from their commence-
ent are soon followed by a short hurried respiration
suppressed cough and pain in some part of the
est. The local symptoms are frequently much aggra-
ted by particular positions of the body, the patient
nding ease only from lying on his back. The Cough
highly characteristic of the disease. It is short and
ppressed and is made with as little effort on the part
the patient as possible. The principal diseases with
ich Pneumonia may be confounded are acute Hepatitis
d inflammation of the intercostal muscles – when the
tter is accompanied with Fever, the diagnosis is some-

imes difficult. In Pneumonia when the pain is very
vere, the difficulty of breathing and the cough are
proportionate to it, and the accompanying consti-
tutional irritation is considerable. In inflamma-
tion of the Intercostal muscles the pain is by far
he most prominent symptom and the difficulty
f breathing lefs in proportion unless a full inspi-
ation be attempted so as to bring the inflamed
uscles much into action when it becomes extremely
cute— The fever is likewise lefs in proportion to the
ocal symptoms and the cough is lefs troublesome
xcept when a full inspiration is attempted.
In acute Hepatitis the pain is generally increased
y pressure over the region of the Liver, and we
iscover the organ is not performing its functions
roperly, that the Stomach is irritable, the bowels
stive or the Biliary secretion is of a vitiated un-
ealthy appearance. We are frequently assisted in
riving at a correct diagnosis by observing a jaundice

inge of the eye, and by the patients complaining
a pain in the region of the acromion process of
he Scapula — Under the title of Pneumonia is
mprehended inflammation of the viscera of
he Thorax and of the pleura and it has hence
een divided into Pleuritis vera and the peripneu-
monia; the former denoting inflammation of
he lining membrane of the Thorax and the lat-
er inflammation of the substance of the Lungs.
his distinction whether correctly founded or not is of
ery little practical use. The treatment is not at all
hanged by it, as inflammation of the Pleura even
if it should sometimes be proved to exist without the
Lungs themselves being concerned still they are so
ontiguous to the inflamed membrane and so
liable to be affected in the course of the disease that
e same remedies are required and to the same extent
if we supposed them to be already involved.
esides it is extremely doubtful if we have any

athognomonic symptoms in which this distinc-
ion can be founded. A more useful division of this
isease in a practical point of view is founded on
e character of the accompanying fever. It may
of a low Typhus grade in which the vital powers
e prostrated from the commencement or of the
haracter of Synocha. I do not wish to be understood
recommending the above division of the disease
strictly scientific - These two different states run
insensibly into each other that it is impossible to
aw an exact line of demarcation between them.
he Synocha in a few days frequently runs into the
mptoms of Typhus and many cases occurring which
on the commencement it is difficult to decide
pon which division they ought to be ranked.
till, however imperfect the division, it is highly
eful in the consideration of the treatment, and the
ractitioner who treats Pneumonia without reference
this distinction is more worthy the name of an

executioner than a Physician — The difference in the symptoms of these two states is the same as is observed between the Febris Synocha and the Febris Typhus. In the former the pulse is strong, tense and quick, the skin is hot and dry and muscular debility not very great — in the latter the Pulse is frequent, small and weak, the skin is dry but the temperature is not so much increased generally as in the former state. The patient complains of much ~~in~~ muscular debility and frequently unable to stand in a few hours after the invasion of the disease. The tongue is generally covered with a slimy, white mucus coat which soon becomes brown and dry. Delirium is an early symptom and the patient is restless and desponding. ——

The Athletic and those of a plethoric habit are most subject to Pneumonia. No Phlegmasia is more easily renewed in persons who have once labound under it. Dr Cullen observes it is more apt to occur between the age of 40 and 60, but it does

t appear that any age is exempt from it.

The principal causes of the disease are those of
neral inflammations, such as changes of tempera
re, exposure to cold and damp weather, sudden
posure to cold particularly when the Skin is moist,
ppressed excretions, repelled eruptions and every thing
hich conduces to plethora — The causes which
peculiar to this disease act immediately upon the
ngs, violent exercise propelling the bloods rapidly
rough the Lungs, loud speaking, blowing wind in-
uments &c.

Pneumonia terminates by Resolution, effusion,
uppuration & Gangrene.

esolution is the only favourable termination,
hich is marked by a copious expectoration of a
ick white or yellowish matter, a little streaked with
lood and brought up with little exertion, hemor-
age from the Lungs or other evacuation, partic-
arly by the Skin which seldom fails to bring relief.

he second termination generally proves fatal by an
fusion of red blood or lymph in the cellular substance
the Lungs, so as to impede the circulation and the
atient dies from suffocation. The tendency to
fusion may be known by the unusual violence
the symptoms, a change in the appearance of the
atter expectorated, the sinking of the pulse, by the
at restlessness and anxiety, the hurried and laborious
spiration. When effusion has taken place, there is
entire cessation of pain, the pulse becomes more
ble and intermitting, the difficulty of breathing
increases, the face is pale and shrunk, cold clam-
y sweats break out, hiccup, facies hippocratica
d death finally closes the tragic scene.
hen suppuration has taken place, it is manifested
rigors and a sense of fullness in the part, an abate-
ent of pain, by the pulse becoming softer and
then slower or more frequent, the cough and dyspnoea
ntinue & are rather augmented and hectic symptoms

in following. We have reason to expect suppuration,
the symptoms do not yield to bloodletting and the
per remedies and the signs of resolution do not ap-
ar in a few days. This disease rarely terminates
Gangrene— the symptoms are similar to those of
fusion. ——

The Prognosis in this disease is gathered from
he severity and nature of the symptoms, the relief
tained from the use of the remedies, the age, consti-
tion and general habits of the patient and the
enius and character of the prevailing Epidemic.
With regard to the severity and nature of the symp-
oms, it is a mark of a dangerous disease, when either
the states mentioned in the division of the disease is
ry strongly marked, but more danger is to be
prehended from the Typhus state, because the rem-
dies applicable to that State have less influence
the local affection. When the Skin is cool
in the commencement, attended with delirium

nd great impairment of the muscular power, with
ontinual restlessness, the case is of the very worst
haracter, and should that state continue for several
ays and the skin become covered with a cold
ammy perspiration recovery is hardly to be expec-
d. When the fever runs very high and the state
the pulse unequivocally calls for the lancet,-should
free use of it convert a tense strong pulse into a
ntracted small one and bring no relief to the pain
d difficulty of breathing, should the expectoration
ll continue scanty and of a thin consistence- dan-
is to be apprehended. On the contrary, should
pulse become more soft and less frequent, the cough
re free and loose, the expectoration of a yellow-
t and of considerable consistence, the pain abate
d with it a cessation of the febrile symptoms, with
improvement in the respiration - recovery is con-
dently to be looked for.

n considering the prognosis, it may not be

proper to remark, that there is in this disease a
at amelioration of the symptoms after the use of
e lancet. So much is the condition of the patient
en amended that he deems himself convalescent,
ut this improvement is frequently but of short
ration, the fever returns with increased violence
d all the symptoms appear in an aggravate
me. In no disease can a judicious prognosis
drawn from a few symptoms seperately con-
ered and in none with so little certainty as in
is. The Respiration is frequently much hurried
d the cough oftentimes continues very troublesom
ng after the patient is convalescing.
n considering the favourable and unfavourable
mptoms in forming a prognosis, due attention
ght to be paid to those indicating any of the
culiar terminations of this disease. When those
suppuration or effusion show themselves after
proper remedies have been assiduously used

a stage of the disease when those terminations are
be dreaded, the Prognosis is rather unfavourable.
age, constitution and general habits of the patient
to be carefully considered in forming an opinion
the probable issue of this disease. Persons ad-
vanced in life with a broken down constitution
illy able to bear the use of those remedies which
inflamed state of the Lungs imperiously
lls for. Should the disease terminate in suppu-
tion the constitution of the patient is what we
ust principally look to — Should it be strongly
inted with Scrofula, Phthisis pulmonalis will in
probability be the consequence — Should it be
ee from any taint of that kind, the contents
the abscess may be expectorated and the ulcer
al as in other parts of the body. It must
ve enforced itself on the observation of all
actitioners who have had an opportunity of
tnessing many cases of this disease, that it is

eculiarly fatal to intemperate men, and should
disease attack with violence the habitual drun-
rd, his recovery is but rare. This disease we have
narked sometimes prevails Epidemically and
ch useful information relative to the prognosis
ay be obtained from an attentive study of its
nius or character. In some years it is peculiarly
tal, and the cases which ultimately prove so are
entimes very similar in the symptoms characte-
izing the disease from its commencement to
e fatal termination —

The treatment of this disease is entirely reg-
ated by the type it assumes. The lancet is in
e the unicum remedium and in others altogeth
inadmissible — and to decide when to dispense
th its use and when to use it boldly is in many
es extremely difficult. When the Pulse is tense
d strong, the skin hot and dry, the pain severe
the breathing difficult, blood should be

ely drawn— No circumstances can well forbid
loss under those Symptoms— and it should be
lowed to flow until the Pulse becomes softer
d there is a manifest. In cases of this descrip-
n it will often be necessary to repeat the ope-
ion in the course of a short time, and should
vascular action have a disposition to increase
ften as the pulse becomes hard and strong, the
in difficulty of breathing distressing, we must
ort to the use of the Lancet again and again.
ses of this description will require the bowels
be opened freely— and for this purpose the
rling laxatives are most proper— Until the
rdness of the Pulse and the violence of the
ver is subdued, the best expectorant we can
is the Lancet— after it has been freely employ
cording to the urgency of the Symptoms and
bowels have been evacuated— We should
minister every two or three hours nauseating

es of Tartar emetic in some mucilaginous diluent
ink for the purpose of promoting expectoration
d determining to the skin. At this crisis of the
ease blistering should be brought to our aid and
blister should be applied as near to the part af-
ted as possible. It is of advantage that the blister
ould be large and it should be allowed to remain
8 or 12 hours, as great advantage may be ex-
cted from a free discharging raw surface.
nder this treatment we will find that the first
ntioned type of the disease will generally give way
an open skin & free expectoration with a soft
d slower Pulse will announce a speedy con-
lescence. Should we be disappointed in our
pectations of relief & although the above men-
ned remedies were judiciously & energetically
the local affection is still remaining with
powers of life too much prostrated for further
odletting – We must rest our dependance on

ucury - one or two grains every 6 or 8 hours should
given in the form of pill to which a little
ium may be added, should the bowels require
ction. Our diaphoretic medicines should now
changed - instead of the solution of Tartar Emetic
may administer an infusion of Serpentaria,
ovided the Pulse is soft under its use and cutic-
ar action is increased by it.

n the treatment of the more aggravated cases of the
ond type of the disease, it is needless to offer any
uments to prove the improprietey of
od letting. The sunken visage, the powerless
usele and the scarcely perceptible pulse, will
fectually protect the patient from such improp
treatment, where there is the least judgment
discrimination in the Physician. Emetics in
h cases are often admirable remedies, their
verful action on the whole system and par-
ticularly on the Bronchial glands and cuticular

lses are followed by the happiest effects.
should be our aim immediately after vomiting
keep up as far as possible those two secretions
for this purpose we should apply a large
ster to the Chest and give some gently stimula-
diaphoretic as Serpentaria Virginana &c.
ased perspiration and expectoration follow
ompanied with an improvement in the Pulse
breathing, we are assured that our treatment is
ect. Sometimes the vital prostration is so con-
iable that we are obliged to resort to more pow-
ull stimulants as wine whey, toddy &c, but it
uld always be done with extreme caution
great vigilance -.
e have now described the two types under which
disease may appear & carefully noted the
ropriate treatment of each - As these two types
nsibly run into each other the treatment
t be so modified as to suit the particular

ondition of each case. No general rules can
e laid down, but must leave much that is
e important to the life of the patient, to the
udgement and discrimination of the Physician
It is only by keeping the division we have
ointed out constantly in view, and by car-
fully examining which type has the preponderance, and modifying the conclusion by
he eye, general habits & constitution of the
atient, with the general character of the
revailing Epidemic, & directing his treatment
accordingly that he can expect to contend
uccessfully against the disease.——

An Inaugural Dissertation

On Dysentery

Submitted to the inspection of the faculty of the
University of Maryland.

By Arnold E Waters

Nathaniel Potter M. D

As a slight but most sincere Token of
admiration of his genius, respect for his character,
and gratitude for his friendship,
This Production is inscribed by his obliged
and affectionate Student. A E W.

1830

Dysentery

This disease may be with great propriety considered
Dr. Sydenham does a favor turned inward on the intestines
This view of it we are led to the most successful mode
treatment; for it carries our views beyond the local
affection, to its medical cure. But before I give this
disease an accurate description it will be necessary
for me to point out some diseases with which it may possibly
be confounded viz Colic Cholera and Diarrhea
Although these may at first view appear to be very
intimately combined, yet I hope I shall be able to shew
that to the minute observer, it will not be so arduous
undertaking. I mention Cholera as a disease which
might be confounded with this, but it may readily
distinguished by its being so rapid in its progress,
coming on with frequent vomiting and purging of
bilious matter great and sudden prostration and
languor and by its soon giving away to the proper
treatment, such as opium alcohol & other Camphorated
and such powerful stimulants.

Here as the progress of dysentery is more slow and
gradually aggravated after the use of Opiates—
the beginning; but dysentery often begins more

like a common lax and goes on increasing
violence with an uneasyness at the Stomach, a
violent pains in the intestines, a tenesmus frequent
ineffectual effort to go to stool is a most constant a
in this disease, whereas no such thing attends cho
There may be spasm of the Stomach succeeding
excessive debility but these may be readily dist
from tenesmus and their cure is directly opp
or perhaps in dysentery a little mucus or bl
seam is discharged whereas in diarrhea the
discharge is generally copious, without the
fruitless straining's, and griping's, tenesmu
fevers & a tenesmus violent griping pains
fevers, are the principle signs by which to d
tinguish a flux or dysentery from a diarrhe
and to these may be added, as the disease
vances, the mucous and serous discharges s
never appear in diarrhea; for it is not accom
ned with signs of violent inflamation an
irritation in the intestines; but in dysente
these symptoms are always present;
We may likewise judg of the disease by the
season of the year, or the diseases which a
Prevalent, dysenteries mostly appearing in

Autum or the Cattle part of Summer; but they are not
confined entirely to this season for they appear also
the Spring, Diarrhea often proceed from slight Causes
obstructed perspiration eating much green fruit or
ly and spiced food, and are easyly overcome by a
e or two of Rhebarb and Laudanum; but in Dy-
sentery Rhebarb or Laudanum; would be the most
ernicious Medicines that could be exhibited.
shall next draw a discrimination between this disease
d colic, colic is a complaint which generally
roceeds from hardened faces or flatas bound up
the bowels which produces pain and the concomitant
symptoms of the disease but there is generally
fever tenesmus or bloody mucous discharge accom-
panying it and can generally be cured by a
thartic or carminative, but it is well known
every practitioner that a dysentery is not to be
rried of so easyly, I can distinguish this disease
lso from other fevers by a knowledge of the prevalent
idemics of the time, and from the violence of the
mptoms; for although it is always accompained
th feverishness, the dysentery shows it self to be
e reigning disease, although sometimes they are
th prevalent at the same time and interchange

4) from one to the other,
In this case I should suppose the most succ
full mode of proceeding would be to pay the
most attention to the most urgent or prevalen
symptoms; and as part of the treatment of one
ease in this case answers for the other when
indications are properly attended to, there is l
danger of falling into capital mistakes he
Although the dysentery very frequently beg
as a diarrhea, and goes on increasing in viol
from the predisposition of the patient, and t
exciting causes operating together, yet in
cases, it will not yeald to the common reme
of diarrheas, and soon demonstrates its nat
by the symptoms above mentioned, yet it s
times appears more suddenly, with feverishness
violent griping pains, sickness at the stomac
frequent, but fruitless straining, with greatiri
and inflamation of the intestine with spasm
constrictions in different parts of them; this
symptom may be increased by the hardened
faeces which are pent up, and there more
parts absorbed by the heat and inflamation

exists along the whole course of the alimentary canal
this costiveness and hardened faces that I have just
mentioned as a symptom of dysentery is not a universal
sign but may occur when a high degree of inflamation
exists which checks and prevents the natural excretion
of the intestines which is calculated to moisten and
facilitate the passage of the faeces. There is another
disease of the alimentary canal which I think
might be sometimes confounded with dysentery from
those dreadful appearances, the treatment of which
might lead to dangerous consequences This disease
is Enteritis. It will be incumbent on me before I
distinguish the symptoms of Enteritis to say
something of its pathology. Enteritis has been
usually considered as inflamation of the strong
muscular coat of the intestines, whereas dysentery
is an inflamation of the internal mucous membrane
of it. From making this view of the case I
think it will be quite easy to draw a distinction
between them, for in these different kinds of
inflamations there is a difference both in the
pulse and sensations of pain. The Enteritis

D Enteritis being an inflamation of a fibrous text
the pulse will be small and hard it has been comp
ly done to the string of a musical instrument th
pain will be more acute and increased on pr
so much so that the patient can scarcely bea
weight of the bed clothes, this disease requires
most active antiphlogistic treatment the stro
use of the lancet and purgatives = Where as in d
tery the pulse is soft and quick neith
is the pain so very active or acute increased o
pressure such is the difference as far as I ca
conceive between the two diseases, I will now
ceed to mention some of the causes of dysente

Causes

The predisposing causes of dysentery appe
to act in this manner, during the continuance o
warm weather, the fluids are invited by heat, an
relaxation of the vessels on the surface of the
to flow outwardly and the internal large vessel
left almost in a state of emptiness and relaxa
by this means they are weakened and become
more susceptible of the operation of stimuli app
to them; and when cold is applied to the surf
so as to cause contraction of the extreme vessel
the blood is thrown upon the internal parts, s

to prove a stimulus to them = Which if the body is already predisposed, by the effects of noxious miasmata, having preceded the application of cold, for some space of time while the heat lasted, a dysentery is commonly the cause ence. From the limited knowledge I have of this ease by both reading and a little experience I have ver known it to occur in cold climates or in wine that destructive form, in which it appears in healthy tropical countries and in hot seasons - t it sometimes follows diarrhea; which are caused obstructed perspiration after warm summer d in crowded places. There have been many uses assigned by different writers, This will ppear more rational than some of them. has the sanction of a variety of authors who ve written in different parts of the world. n durated foeces have been by some eminent ractitioners and teachers said to be a very eneral cause of dysentery, but the majority at I have seen and read incline me to the contra opinion. That indurated foeces as well as runci oils food, or worms may bring on a lax, then ca

be no doubt, especially in irritable habits of bo
and the intestinal canal. But I am confident t
indurated faeces are by no means such frequ
causes of dysenteries as some eminent practitio
would lead us to believe; for there are very f
either of the Moderns or ancients Physician
ever mention the circumstance; and besid
does not appear credible that hardened
faeces themselves, could put the whole b
frame into such high fevers as generally
attends true dysenteries. Therefore there must
be a spasmodic predisposition to the disease
existing in the constitution, before any of th
exciting causes can operate effectually in
ducing this disease. There are sufficient reas
to persuade me, that when the human fra
is predisposed to the dysentery, by being
used to the foregoing causes very slight
occasional causes, will excite the disease
such as alterations of the temperature of
air, from heat to cold and this is very common

the case at the time when it appears; but especially rainy weather after great heats are very apt to cause its appearance; and the more so if both cold and damp weather sets in together.

For the cold air and dews of the evening, after the heats of of the days are peculiarly apt to cause the dysentery to appear; and they will cause it the more certainly if those who are exposed to them are in an inactive situation as siting out of doors or exposed to the cold air in any manner. For then the external surface is chilled by the cold and the small vessels contract and get into an inactive state and the fluids are forced inwards on the large vessels and interior viscera, particularly those of the belly, and from this lax structure and slowness of the circulation through them the blood upon its return from them having to force its way with very little assistance through the peculia

system of the liver. When we consider this and
preceding account we may find sufficient
for the disease in question. From the foregoing
rations one might suppose that I contended th
was no other cause of this disease than that
obstructed perspiration &c but I am fur
it that green fruit may act as a cause of it
the person is predispired I am very much incl
to believe from actual observation in this ca
the acid acts as a great stimulus to the del
coat of the intestines and in this manner ex
an inflamation in them which proves a ca
of dysentery - ripe fruit I think is inocent
here the sacherine fermentation has progr
so far as to obviate the violent effect whic
the green fruit has upon the intestines, s
from its being considered pernicious I hav
seen it recommended to those who have la
ed under the disease in some treatise whic
I have seen =

It appears that in all diseases of the intestines there is a considerable degree of susceptibility to stimuli and this is a principle cause of these affections whether, cholera, diarrhea or dysentery and by what ever means this state of the intestines is induced it may cause these diseases in this manner explained; and it may be attended with inflamatory symptoms in those who are affected these may particularly in the young and robust. Most of the ancients supposed ulcers of the intestines to be a cause of the dysentery, but it has been found that they are rather the effect than a cause the mucus discharge which is a very prominent symptom in dysentery does not always proceed from ulcers but from the inflamed surface of the interior coat of the intestines long before any ulcer can have formed, for we know from actual observation that this discharge takes place in any inflamed mucous membrane without the formation of any ulcer

as in Gonorrhea, coma or catarrh. They beg
at first with an increased secretion of the
natural mucus which soon becomes thin
acrid and thus prove a stimulus to the pa
and increase that inflamation which they
intended to prevent and thus the vessels d
and suffer serum and red blood to be di
ged. This is a common course of dyspen
and the reason why it attacks the inte
is preffrence to the lungs or any other pa
is because they are the most debilitated pa
In children there are other causes which are
common to adults viz the great irritability
their habits the cutting of their teeth whic
affects their stomacks by sympathy and a
this age are often found of green fruit and
indigestible substances and at this time
they change the food from fluid to solid
certainly must be hard of digestion to weak
organs From these circumstances I should
pose, they must more liable to it than adults

-Treatment-

It is now time that I should come to the cure of
ysentery, in the first place I shall speak of the
se of the lancet, but with regard to this remedy
ere has been such a variety of opinion that
will be a difficult matter to lay down any
neral rules to its practibility, There are very
ow practitiners who have not seen cases in
hich this remedy would be indispensible,
nd on the contrary cases in which it would
pernicious, under existing circumstances
will make a feeble attempt to point out cases
different stages of a case in which it would
neficial or otherwise as I think general
les in the practice of the healing art,
thout proper discrimination, are often
artful than useful. In the strong and
letheric, when the pulse is hard and full
equent bleeding is absolutely necessary
d may be repeated in proportion to the
gency of the symtoms; but that must
left to the practitiners prudence who is to be

guided by his experience and reason = Whe
much fever accompanies the disease with pai
the head and burning pain in the stomac
It is a very strong indication for the use of the lancet,
But bleeding must appear to any reasona
in the weakly, the aged, and those who are n
reduced ~~improper~~ previously or worn-down
other diseases in any situation, but more s
marshy, low and unhealthy districts of cou
where agues are prevalent; Next to bleedin
or perhaps before it the state of the alimen
canal should be taken into consideratio
It will generally be necessary in the first pa
to exhibit an Emetic and during its opera
to allow the patient to drink freely of warm
or warm camomile tea, after this has bee
ected he should wrap himself close in
bed cloths so as to promote a general perspi
And by that universal sympathy between t
skin and stomach and intestines cause a d
vation of the fluids from them to the skin
Although Emetics are generally proper i
this disease there are some cases in which

re improper as where there is great irritability about
e stomach and a diseased liver, this being the
tuation of the patient vomiting would do far more
rm than good by increasing that irritability of
stomach which all ready existed and communi
ting the same to the liver. In cases of this natu
would be better to trust to calomel and other
ild cathartics as the natral salts, particularly
sulphate of magnesia and sulph: soda or
rochel salts. as these evacuate the intestinal
nal without producing any great commotion
the parts but are also a sedative and cor
y nature, and even where Emetics are of great
these purgatives are absolutely necessary
order to easy off the accrimonious contents
the bowels, the oleum recini is a very excelent
urgative when the griping and pain
very great it may be made more agreeable
the taste by the addition of a small portion
the compound Fincture of Senna the natral
lts are disagreeable to most people they
y be made less so by the addition of a little
mon Juice or venegar their cathartic effect.

is increased by adding one grain of Tart Em
to the ounce and then given in the usual
All through the cure a perspiration sh
be promoted by warm of the bed, and wa
dilating drinks and antimonials. The
practitioner of allowing patients to thro
the bed cloths off of them is very pernicio
because it obviates the very effect that w
wish to produce (that is perspiration) wh
is calculated to check it, that this is the c
I am very well aware and I am astonishe
that some practitioners to allow it, the
antimonials through powerful diaphore
yet when the patients are exposed to the
air they are turned in upon the stomach
intestines and produce vomiting and gri
Although ipecacuan is a mild emetic
in the early stages of dysentery its utility is
doubtful and upon account of a property
which in this it was formily much exto
as universaly useful in this disease I me
the astringency which it leaves in the int
after its operation is over for any things of
astringent nature is to be avoided as per

Antimonials Emetics therefore are preferable
at least a grain or two of tartar Emetic should
mixed with ten grains of ipecac; for
its laxitive quality it will prevent the
rst effects of the ipec, when it is used. As to
e choice of different preparations of antimony
hen we wish to produce vomiting we should
use the most active and those which
e the most soluble such as the tartarized
ntimony or those which are already in
lution as the antimonial wine. But
hen there is great irritability of the stomach
d it becomes necessary to give a febrifuge
se preparations would increase it by
miting, then it would be the better plan
chose those which are slower in their
eration such as the James powder or the
ermer's mineral or Rush's antimonial powder
ese when exhibited in their proper doses
ove excellent diaphoretics and are proper
medies in most febrile diseases their effects
ay be increased by warm diluting drinks and

the warmth of the bed. The Drivers powde
so highly recommended in this disease by so
practitioners. I think are very improper
the first stages particularly their stimu
effect is so great that they increase the fe
the griping and tenesmus but in the la
stages where the patient is much debilit
and also exausted from want of sleep
are very beneficial from their anodi
effect they also have a slightly febrifu
effect. Whilst the pain and fever
continue obstinate laxatives of the nutr
salts or castor oil which is a medicine
the greatest importance in this disease
should be so repeated every few or si
hours at farthest until they have been
the desired effect, which can be told
by producing a natural operation. The
drinking plenty of warm diluting flui
as gruel rice or barley water - fresh bre
or whey are peculiarly useful in the early

the disease and they should be taken
quently. but cold drinks should be avoided
though they frequently deserved by patients, in
disease; yet until the violence of the malady
ver the patient should not be permitted to
dulge himself in the respect. In some very
y obstinate and violent cases, it may be nec
ary to have recourse to laudanum or opium
t this drug is not to be used in the beginning
hight of this disease without the most urgent
cessity; for at these times it always leaves bad
ects after its use unless care be taken to prevent
em by adequate means. for I should suppose the
y worst consequences would follow from the
e of it not only in true dysenteries but in
iarrhea as attended with fevers, and on the
ure account, it is scarcely necessary to
n entire that all sorts of stimulant and
dractic purgatives, are very improper

as Jalap scammony aloes senna &c when
although too frequently and even indiscri
used by the ignorant; as well as some medic
who should know better. For as the intestin
extremely irritable in this disease these st
purgatives readily cause violent com m
and increase their action which are
dy overgreat and by this means increase th
lent pain griping and tenesmus with sp
mortic strictures and excretions by their a
on the very sensible coats of the intestines. a
they are seen when in this situation deprive
of their native mucous lining or cover; a
explained else where; and are therefore un
fended and exposed to the acrimony of th
contents = When great symptoms of irritability
prevail with restlessness and want of slee
a small opiates may be given at bed time tak
care at the same time to order a mild laxit
the next morning to clear the intestines of t
accumulated foces which are collected
to produce irritation.

this is neglected the pain and gnashing with
turn with increased violence these are to be
ing also when fever and inflamation is gone
d the increased secretion is kept by the weak
and relaxed state of the vessels of the intes-
s. And even Astringents and Tonics as bark
extract or decoction of Logwood is even
ums or catechu may be given - but these are
be used with great caution in the beginning
ere attended with febrile symptoms it should
treated like any other fever

An

Inaugural Dissertation

on

Pneumonia Biliosa or Typhoides.

Which is respectfully submitted to the examination of the Faculty of Medicine in the University of Maryland.

For the

Degree

of

Doctor of Medicine

By

Joseph Carr

of Maryland

1827

Dedication

In the ensuing pages I shall speak of the disease called Pneumonia Bilosa or Typhoides; this disease have attracted much attention and there is but little, I shall say on this subject; but to Exhibit in a condens form, most of its most prominent features; there will be things omitted that might be ~~questioned~~

For the unremitted attention which the Professors of this Institution have manifested towards me I cannot omit this opertunity of offering my sincere thanks to them

Introductory Discourse

object of the science of medicine is the
oduction and the cure of diseases,
hough the noxious agents which which
rrounds us, are numerous, yet nature
pplies, in some measure, the means
preventing and curing their bad effects.
he exhalation from vegatable and animal
oduces fevers; and their disagreeable and
rible stench is a sufficient warning to
oide them.

power of nature alone through greate
not, however, always sufficient, either
discover these noxious agents; or to remove
e disease to produce by them

e measmata produce from the putefaction
vegatable matter, often give no warning
their smell, and destroy without its danger
ing being antiscipated

is is true with regard to may other noxious

ents: thus sudden exposure to mephitic air
descending below the surface of the earth
ves away life, and no instinct; none of
our senses warns us of our danger.
e therefore require other assistance
an those of nature alone, in
aviding the causes of Diseases, and
t is the province of the science
medicine to supply them, by a cau=
ous examination of the properties
bodies around us.
hough diseases are often relieved
without the assistance of art, yet
t is well known that many
rocesses undertaken by nature
repair an injury, are often
o violent, and destroy life, without
he intervention of art. Then then
rt assist, and in doing so, the
properties and nature of the

system as also those of external
bodies, must be studied to disco-
-ver their effects upon it, and
subsequently the process of curing the
diseases excited by them.
This mind and this senses, accor-
-dingly, are the instruments by
which this end is effected
By them application for the pur-
-poses of discovery to the world
around us, great errors have been
committed, and much unprofi-
table labour has been
lost, in their direction to the
practical duties of our pro-
-fession.
In the following remarks, there-
-fore, as medicine is a science
which teaches something to be

done, and the most correct mode of doing it, and as it uses natural to effect its purpose we shall first consider the nature of the causes and effects, in relation to the production and the cure of Diseases, and secondly, the sources of the errors of Medicine discovered in the history of its past ages

We shall thus be enabled to pursue our way upon the firm and open road opened by Modern discoveries, with profit and advantage

Pneumonia Biliosa or Thyphoides

This variety prevails principally in marshy districts, and in wet and cold seasons, and is produced by the joint effects of Miasmata, and alternations of temperature, intemperance &c.

It is called in the southern and middle states, where it appears usually in the winter and spring, Bilious or head Pleurisy, or cold Pleagin by some persons, and it is properly an inflamation of the Lungs or Pleura, combined with a remittant fever, exhibiting the whole series and varieties in grade, from the highly Tonic and inflammatory to the Typhoid form, In the eastern section,

of our country, the disease is seldom distinctly formed, presenting the faint nothern complication, with catarrh or some of the genus Cynanche. The farther south the more this disease is dispose to assume a Typhoide complication, like the ordinary remittant of the summer. Adults is more frequently the subjects of this disease than Children, and woman as they are less expose to the causes, suffer less than men, and Negroes according to professor Potter, are rarely affected with this disease. It generally comes on like the remittant fever, with a king and numbness of the flesh, chills, with local pains

the jawes, ears head, arms, and legs
sometimes with Neausia, Vomiting
and Diarrhea, accompanied with a
in some part of the Thorax, some-
times there is no premonetary
Symptoms, and assumes the ordinary
remittant Type. Sometimes the extreme-
ties become exceedingly cold to the touch
and no reaction follows, the patient
is then dangerously ill
The general symptoms are attended with
all the varieties, which characterises the
ordinary remittant fevers, as I have
before mention. of course it is unless
to enter into a particular discription,
the disease consist of the ordinary fever
of a Typhoid Type, Combined with a
determination to the Lungs
When it attacks the head, Liver, Sto-

the Liver or Bowels, the complication of the
disease of the Lungs is frequently overlooked
from and the complaint is mistaken
for inflamation of other organs.
The affection of the Lungs however,
will easily be discovered by attending
to the difficulty of breathing the
Cough &c.
This disease is often insidious and
uncertain in its career. The patient
frequently appears better immediately
before its fatal termination.
The breathing (however) becomes sud-
denly laborious, the motions of
of the Heart more irregular as
rattling in the throat comes on,
the extremities become cold and
death the final termination by an

fusion takes place into the
lungs
Obstinate constipation particularly
in the Hepatic Cases, often appears
as a symptom, sometimes a watery
purging distinguishes the disease,
at others the stomach is extreamely
irritable, a black discharge takes
place from the bowels, and
the discharge goes off by a gentle
perspiration
The pneumonic symptoms may
be alleviated by warm pediluvia
with stimulating diaphoretics
and a free use of Diluents
Where the habit is Plethoric Blood
letting is sometimes useful in
the forming stage of the disease,
an Emetic followed by a dose

of Calomel and opium, when
there is any tendency to a watery
purging, is also useful
When the disease is thoroughly
formed the treatment should
consist partly of that which is proper
in Typhus and Pneumonia conjointly
and it should be active in pro-
portion to its character. If cynochus at
first the depletion must be more
considerable; if Typhus from the
commencement it must be more
or less stimulating. General bleeding
in this form commonly impossible
excepting in the very first hours of
attack, even when taken from
the surface of the chest by scari-
fications may in many instances
threaten a fatal termination; and

the organs of the system completely
broken up. This however occurs
only in extream cases
The signs of this state of debility are
similar to those which have been
given under the head of the Typhoid
form of continued fevers, Rigors, cold
extremities pain between the shoul-
ders; along the spine and back of the
head; with much difficulty of
breathing; cold perspiration; general
feeling of misery and wretchedness.
great pain with a sense of tearing
and burning in the breast. The pulse
at first small, hard and corded;
slight retching with a greenish
fluid running from the Mouth;
The Tongue covered with a Brown
crust, with the edges and underneath

dry and red; the thirst great, the breathing laborious and irregular, the skin hot and parched; Urine scanty and high coloured; delirium with great prostration of strength and spirits, the stools offensive and dark, the expectoration with blood. in some cases blood may be drawn in small quantities and repeated until the pulse is reduced.
If the pulse should be always low and it be advisable to take away small quantities of Blood I have before ~~spoken~~ of it being taken away by scarification or cupping which sometimes may be applyed with advantage to the chest and succeeded by Blisters
the pulse must be narrowly

watched and if they flag de-
-pendance must be placed in
the first stage upon Emetics of
Tartrite of Antimony or Ipecacuhana
Together with purges of Calomel and
Senna or Magnesia, salts, Castor Oil
or small doses of Tararized Antimony
frequently repeated, till the stools
become natural. The skin must
be kept soft with Nitre Senka
Tea, and as the system debilitates
Wine Whey, Camphor and Opium
and Carb Ammonia may be
given to keep up an expectora-
tion and support the strength
As the pain in the breast, difficulty
of Breathing; and other symptoms
of the Pneumonic affections
abate, it is necessary to give

tonics; The system must also
be supported by mild nourishing
food as Tapioca arrow root, sago
to be administered in small quantities
and frequently repeated; The irritation
by Blisters on the Chest; in the
mean time should also be kept
up.

To

Maxwell McDowell M.D.

Professor of Institutes

in the

University of Maryland,

this essay is respectfully dedicated

by

The Author.

My intention in presenting this, is not an attempt to offer any thing new; but merely what I have collected from the opinions & writings of others. — In the first place I shall endeavour to give a correct definition of the disease, & then proceed to the cause & treatment. —

Ascites then, may be defined a preternatural collection of serous like fluid contained within the cavity of the abdomen. — Concerning its immediate cause different opinions are still entertained by Medical writers. — Some contend that it arises from two opposite states of the system, viz. a plethoric state, & that of debility — And when arising from the former, the exhalent arteries terminating on the internal surface

of the abdominal cavity, which in their healthy
state thrown out a halitus to lubricate the contained vis-
cera, have their secretory function completely de-
ranged, & in such a morbid condition, that the fluid
poured out is not only changed in quality; but the quan-
tity secreted is more than the absorbents, whose action
it is alleged, cannot be increased beyond their healthy
standard, are capable of removing — This in my opinion
is the most plausible & correct theory of dropsy within
the abdomen. — When debility is assigned as the cause,
it is said, that the same exhalent arteries from a
want of tone become relaxed to such a degree, as to
allow a copious exudation of serum to take place,
the absorbents being also debilitated are rendered
inadequate to perform their duty & thus, in the

accumulation, which is gradually increasing, ac-
counted for. —— With regard to the relaxation of
the exhalents & consequent exudation of serum, there
exists this unanswerable objection, which is, that the
fluid in dropsy is not the serum of the blood, & pos-
sesses none of its characteristic properties — the ex-
periments, of exposing it to the temperature of 160° of
Farenheit's scale, or of pouring on it any of the mine-
ral acids, will fail in every instance of producing
coagulation. —— The morbid secretory process of the
internal exhalents may occur as well in a system
debilitated, as in one of an opposite condition — for
any obstacle to the due circulation of venous blood in
the abdomen, producing a remora or congestion, will
tend to increase the action of the heart, & of the arteries
terminating in those veins — the blood, not finding a

eady passage from the arteries to the veins, & from the vis a
rgo, forced into the extremities of those arteries, which con
equently becoming enlarged in their calibres, allow not
nly a greater secretion to take place; but that, of a qual
ity too gross for the absorbents to remove. — Among the
auses producing this languid circulation in the veins of
he abdomen, may be enumerated pressure from enlarged
iscera or from tumours within the cavity — Enlarge-
ent or induration of the liver from whatever circumstance
rising, is one of the principal causes, either by its pressure on
the ascending Cava or from the diminished capacity of its
on vessels not allowing all the blood of the Vena Porta a ready
ntrance into them. — Independant of the above causes,
uppressed secretions, principally of the perspiration & urine
, increasing the quantity of the circulating fluids, which finding
e internal exhalents less resisting than any other part, may
low them into the morbid state. — Whether scantiness of urine &
erspiration be one of the causes producing dropsy, or rather

consequence, is uncertain — I am more inclined to the latter opinion. - for the want of perspiration & urine may be only symptomatic, dependant upon the immense secretion going on rapidly within the abdomen. — Large quantities of fluid taken in as drink, are said to have occasioned dropsy; but from this opinion I am inclined to dissent — for whatever fluid is taken into the stomach is pass off very soon by some of the emunctories; but it is highly possible, it may increase the disease after it is once formed. — Ascites makes its attack insidiously, & not unfrequently is supervened on the close of other diseases. — When occurring from the latter circumstance, it is for the most part connected with general dropsy. — The symptoms characterizing it are, fever — dry skin — heat — thirst, scarcity of urine, with a pulse round & hard in the commencement, the swelling uniform & tense, somewhat elastic, accompanied with evident fluctuation, the sensation of which can be perceived on applying the fingers of the left hand to one side of the tumour & striking it with the fingers of the right —

these symptoms are preceded by an impaired appetite,
great languor, indisposition to move about, and an almost
irresistable drowsiness — We cannot always dis-
tinguish wether the fluid be contained within the pe-
itoneal sac or not, sometimes it is found in the
form of hydatids, & rarely is it situated between
the abdominal muscles — Its complication
with anasarca or general dropsy is of frequent oc-
currence — When it is encysted, the swelling is
not uniform, nor is fluctuation so perceptible —
The ovaria are often the seat of dropsy, & when this is
the case, the tumour in its forming stage gives consid-
erable pain, & is confined to one side, as it is seldom indeed
that both are affected at the same time — the tumour
conveyes to the patient the sensation, as if loose & mov-
eable within the abdomen — And the menstrual
discharge is not obstructed, which shews the dis-

cade has not affected the system — Tympanites &
Ascites have sometimes been mistaken for each
other; but the absence of fluctuation in the former
& every discharge of wind upwards or down affor-
ding immediate relief, soon point out the nature
of the cade — Pregnancy has also been confoun
ded with Ascites in some of its symptoms, & se-
rious consequencies been the result, but the
symptoms of the two are widely different — the en
largement of the mamæ & the shooting pains through
them, the motion of the child in the uterus, absence
of fluctuation & lastly the appearance of the distended
abdomen are sufficient to descriminate the state
of pregnancy from any disease whatever —
Ascites may also be distinguished from enlarged vis-
cera, by the swelling being confined only to the region
of the diseased organ —

The diagnosis in every case will be found sufficiently
plain and evident by careful attention to symptoms —
The prognosis is always doubtful — It is unfavoura-
ble, when the disease arises from visceral affections
which have long existed — & the whole system much re-
duced in consequence — A favourable termination may
result when the constitution is not much impaired, no vis-
ceral obstruction existing & the patient has not far advanced
in life — When this change for the better takes place, the
different secretories resume their healthy functions —
Thirst is not so distressing, skin grows moist, & the urine
is increased in quantity, appetite returns, & the swel-
ling soon abates — Its complication with Hydrathorax
& Anasarca is very unfavourable — In the treat-
ment of every disease, the first indication is to remove
the cause; but allowing this to be practicable, the re-
sult in every instance would not be a removal of
the effect — And whatever may have been

cause, we must endeavour to check the further
ogress of the secretion; & if possible by proper medicines
use the fluid to be taken up & thrown from the system
through some of the excretories of the body. — Abstrac
ion of blood, in the forming stage of this disease, by less-
ening the action of the heart & arteries upon which the
ecretion depends, has proved beneficial in almost every
stance, & should not be omitted in those cases where the
ulse is in the least degree tense — it also allows the
edicines to exert their proper action. — The blood
hawn generally shews the buffy appearance, indicating
he presence of inflammatory action — Emetics are oc-
asionally used — & are highly serviceable when much
nausea & vomiting distress the patient — by increas-
ing the perspiration, the quantity of circulating fluid
ent to the internal parts is much diminished —
They should be given in the earlier stages — When

An

given after the disease has long existed, the debility occasioned by their exhibition serves to renders ~~the disease~~ it still worse. As regards the choice of particular emetics a preference is given to those, which after their operation either give tone to the stomach or produce but little impairment of its function — Among these may be enumerated the Sulphas Cupri - sulp: Zinci, Ipecac: & a few others. The class of medicines recommended in the treatment & considered highly important are cathartics — from the great discharge which they occasion from the intestinal canal, no doubt can be entertained of their efficacy in every species of dropsy. — That division of the class of cathartics called Hydragogues are preferred, because they eliminate a greater quantity of fluid & there diminish that morbid secretion from the internal exhalents. For this purpose the following have been much used, Gamboge, Colocynth, Scammony, Neutral salts, & the supertartrite of Potash, the latter is also given with a view to its operation on the kidnies. — ~~Together with the above mentioned~~ Frequently combination with one or other, of the above mentioned, the ~~the~~ Mild muriate of

Mercury is often administered, it renders their operation more certain
& the same time restrains them too violent action. — Mercury both
a purgative & alterative is a sine qua non in the treatment of dropsy
arising from diseased viscera — exhibited in every case of this
description, experience had always conformed its happy effects;
by restoring in a great measure the different secretions, & the
alterative action which it produces in every part of the system
morbid secretions either become changed or suppressed — exhibited under the preparation termed corrosive sublimate so as
to produce ptyalism, which can easily be effected by giving it
in such doses as will cause emesis — the discharge
which is occasioned from the salivary glands, when profuse
must undoubtedly tend to diminish the size of the swelling.

Diuretics have long been held in high estimation in
the cure of dropsy, & are among the principal remedies
demanding our attention. — Among this class Digitalis for
some time past claimed the first standing. — Dr Withering
a periodical publication bestows very high encomiums

hon it — his remarks are as follow — "Digitalis or Foxglove
ill not universally act as a diuretic; but it more generally
oduces this effect than any other medicine & often after this
ve been tried in vain; that if it fails there is but little chance
f any other medicine succeeding: that in proper doses & under
ood management, it is mild in its operation & gives less dis-
urbance to the system than squills or any other active med-
cine — It may be used in every species of dropsy excepting
hose encysted" — And he further remarks, that it is more
uccessful, given when the system is much debilitated, than
hen there is much excitement — The form under which it
s recommended by him, is either the powder in doses of
wo or three grains during the day, or the infusion in doses
f ℥ss. — Tobacco is another article of the class which
s entitled to our consideration — it may be given in
he form of infusion or tincture — from the unpleasant
ffects it is likely to produce on delicate habits, it is seldom
rescribed — it induces a plentiful secretion from the

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dnies. — wether the produce the same action on persons habituated
its use, from the ordinary method of chewing & smoaking the plant,
in my opinion questionable. — I have seen the decoction ad-
ministered per anum in a case of strangulated inguinal hernia
without the least impression being made on the system — this patient
was in the habit of chewing & smoaking the plant to great excess
other medicines of the same class are frequently employed, but which I
shall omit mentioning here. — From the constricted state of the skin
the indication for employing diaphoretics is very evident, &
hence they are most generally with other medicines, but
wether they are of much service, is doubtful. — The skin, it has
been conjectured, changes in dropsy from the secretory to the absorbing
state — with this idea a respectable physician, for the sake of ex-
periment, placed his patient labouring under dropsy into a strong
decoction of oak bark, & keeping him in it for some time, in order
that he should be tann'd alive, as he expressed himself. — It would
be useless for me to mention the result, — as every one must know
that chemical agents do not exert the same influence over living

anized bodies, as on dead inert matter. — Blisters are another
eans resorted to for evacuating the fluid from a dropsical pa-
ient; but the great excitement which they create in vessels so much
bilitated, is apt to throw them into a Sphacelus, & hence they
ve justly fallen into disuse. — After all the medicines
eady enumerated have been tried & in vain — & the patient,
om the great accumulation of the water, is rendered unable to
ove about — then & not before is the operation for paracentesis pro-
ced. — To this delay of the operation may be attributed its frequent
ilure. — The pressure of such a large collection of fluid must
doubtedly injure many of the viscera — & also by retarding the circu
tion of blood thro' the ascending cava, soon produce oedema of the
remities. — The operation is now recommended to be per-
med, the moment fluctuation can be distinctly felt in the tumour
the medicines which have been exhibited, produced but little
ect. — The opinion is that the operation contributes to the cure
y by accumulating the excitability of the system, thereby allow-
g medicines to act. — Different places are proposed for

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forming the operation — the two most common are 1st the midway point be-
een the umbilicus & anterior superior spinous process of the illium — the 2d
bout two inches below the umbilicus in the linea alba. — the objection
he first, is the danger of wounding the epigastric artery — to the second is
of a more serious nature, viz the wound, from the low vitality of the
rt, not closing up, but degenerating into gangreene. — The point now
lected, is the little cavity around the umbilicus, where there is
ly skin & cellular substance. — the only instruments required
forming the operation, are a lancet, & trochar with its canula.
oad bandage should be passed around the abdomen, which is to
gently tightened as the water flows off, in order to prevent syn-
e, which takes place sometimes to an alarming extent, from
sudden removal of distention. — There are instances on record
ere it is said, the water of ascites has been discharged from the
rus. — wether it is taken up by the extremities of the fallopian
es & conveyed by them to the uterus & thence expelled — or according
ecent opinion, the vessels of the uterus, taking upon themselves
a secretory process similar to that of the internal exhalents,

An

Inaugural

Medical Dissertation

on

Epilepsy

by

Charles S. Smiley

To

John Revere M.D.

With your
permission I have taken the liberty of
dedicating this my maiden epistle
to you, hoping that it may be
viewed with less scrutiny
and severity than
its merits: —

Your
Talents and Virtues
both in
Public and Private life,
have endeared you to numerous friends, among
which number, for your politeness and
regard, shown me during my studies
in your office, I respectfully
beg leave to subscribe
the name of the
Author.

To

My kind and affectionate

Father

Leonard Hailey Esqr

Who amidst the toils and hardships of a
laborious profession and the burthensome
expences of a numerous family still
extended his love and regard so
far as to give me an education
suitable to studies of an
honorable profession,
With filial regard I beg leave to offer my
grateful thanks, in this my first
Essay, on a branch of the
profession which I
Have by your assistance and my own exertions
Successfully acquired:

The Author.

Epilepsia

Nescius aura fallacis –
Miseri, quibus intentata nites. –
Hor.

I propose in the consideration of this disease, to treat first the History of the disease, second of its Predisposing causes, d of its Exciting Causes, fourth of its diagnosis, fifth of Prognosis, and lastly of its Treatment. –

History.

This disease generally makes its attacks in the form Paroxysms, and consists, in a sudden deprivation of the ses, accompanied with a violent convulsive motion of the dy, sometimes more on one side than on the other; if the patient standing, he immediately falls or with convulsions is fre tly thrown to the ground; during the convulsion, the facial cles being alternately relaxed and contracted, the coun ance becomes horribly distorted, and the passions succeedi h other with singular velocity, are often depicted with cous expression in the face. The muscles of the orbit being cted in the same manner, the eyes are rolled about with idity, & the dark part being convulsively turned upwards, e but the whites, are distinguished between the half

ened eyelids; the globes, sometimes, however remain fixed, the wrinkled forehead exhibits the picture of rage;— the gers are closely clenched, and the thumb is violently thrust to the palm of the hand; he foams at the mouth, & thrusts out tongue, which sometimes suffers from the contractions of the sles of the lower jaw, which are often so violent as to break teeth or luxate the Jaw itself;— Borborygmus, eructation, iting, and the involuntary discharge of faeces, urine & semen, nce that the internal structures are similarly convulsed.

After a longer or shorter continuance of the convulsion y cease altogether, and leave the patient motionless, stile ever in a state of absolute insensibility, and under the ap ance of a profound sleep; after some continuance of this ing sleep, he gradually recovers, having however no recollec of what has occurred:— The Vital functions during the pa ysm are also disturbed,— the breathing is laborious & stertu s, and is sometimes performed with sighing & great effort, h as a strong man exhibits when lifting an enormous then:— From the beginning to the end of the fit, the patient before remarked, foams at the mouth & nose, & when the ue has become lacerated, this froth is coloured with blood; e face becomes gradually more livid & sometimes almost ck;— In more violent paroxysms, blood is said to flow from

mouth and nostrils: after a long continuance of the disease, memory becomes imperfect, the senses lose their activity, the e becomes pale, and the patient is affected with languor dness & fear * * * * * * * * * ——

The fit is frequently preceded by pain in the ad – lassitude – some disturbance of the senses – unquiet ss – unusual dread – noise in the ears – flatulence in the mach and intestines – spasm of the muscles of the tongue, so lent as to draw that organ back into the fauces – palpitation the heart – coldness of the joints – sensation of a cold air, <u>aura epileptica</u>, arising in some part of the extremities radually creeping upwards, until it reaches the head, when patient is instantly deprived of his senses, and falls as above cribed ——— I have here given the usual form of the ase, but it is sometimes distinguished by more remarkable ptoms as Boerhave shows in this "there is no gesticulation lection or posture known which is not sometimes exhibited in disease & it imitates on some occasions all the different motions unning, walking, turning about, prostration & standing up" and ingular example is mentioned by a writer on this Disease, of a tient who on the accession of the fit, "did not fall down, but rled around like an opera dancer".

Predisposing Causes.

Among this class of causes, may be reckoned, great irritability the nervous system, this is apparent for many of the exciting ses may be applied to many persons without any effect; there ists in some that mobility of mind so analagous and intimate connected with that irritability of the nervous system, that rium et mutabile femina, this is apparent in those who acted on by, slight causes, readily elated by hope, or depress by fear, & who are easily changed from the one to the other, ose minds are constantly waving, between pleasing and dis- eable sensations, sometimes pleased and gay, at others ily provoked & peevish; and in no disease is a cause more minent, than that mobility or irritability in this disease, it is sometimes born with the child, and it dies of it —

Another predisposing cause is sleep — for in many persons are afflicted with the disease, an attack only happens ing sleep, or immediately after rising from it — I have my- seen a case, in which the attacks were experienced in the ht, or early in the morning, this is owing to this circumstance during sleep, there is more or less mobility or irritability nsequently debility produced —

The last cause of this class, I shall mention is editary predisposition, and where this predisposition is

ifficult, the exciting this disease in one will produce apo
lexy in another

Exciting Causes

Mechanical irritation by substances acting im
mediately on the brain; as sharp pointed instruments which
erce the cranium & enter the brain; depression of bone
the substance of that organ; tumours in the same situ
tion;- fluids lodged in the brain either from rapture,
cess or effusion, (this is accompanied with mania & Pa
lysis) particularly when there is any predisposition to
disease;- the most important cause is irritation applied
the brain, from over-distention of the vessels with blood, this
tention may be caused; by over eating; too much exercise,
treme heat; hard drinking and any cause exciting increa
circulation;- Mental Irritation - The frequent forgoing
paroxysm, called Epilepsia Simulata, will at length
der the attack real;- the effects of joy & surprize; sudden
ht and terror;- fits of passion; or any vehement emotion
the mind;- disappointments, this it is said caused the
ath in Julius Cæsar and Napoleon Buonaparte, it
a very powerful cause;- large doses of Narcotics and
ny other poisons taken into the Stomach will, by producing
direct debility in the brain, cause the disease;- certain odours

worms;- dentition;- acute pain;- calculi in the kidneys;-
action of Contagion;- excessive venery;- excessive evacuations
increasing the excitability, thereby rendering excitement
ch more easily produced;- suppression of accustomed dis-
ges;- tumours pressing on any part of the nervous system;-
is sometimes the consequence of a wound of a nerve, this is
believed by some, but it sometimes takes place, although
most frequent consequence of such an occurrence is the
duction of Tetanus.—

Diagnosis

rom Convulsions - By its terminating in sound sleep, and
the total abolition of the Sensibility.—
rom Apoplexy - By the voluntary motions in the one
se being increased; in the other totally suspended.—
rom Hysteria - By the absence of the Globus Hys-
s, and the presence of the Aura Epileptica;- by the
ulsive motions in one disease, having the appearance
design; in the other, obviously involuntary;- by the absence
any prominent symptoms of hysteria, such as profuse
mpid urine, alternate laughing & crying &c.

Prognosis

avourable - The disease being sympathetic, occurring
the age of puberty, and arising from causes easy of

noval; there being no hereditary predisposition; here the disease
y be easily removed; frequently they recover without the
of medicine merely by the gradual development of the
vers of the body, so that at the age of puberty or a little
ore, the disease leaves them: it has been often removed
an intermittent fever, or cutaneous irruption. —

Unfavourable — The reverse of the above; when the
ease comes on after the age of puberty; — when it has arisen
m an hereditary predisposition, or by frequent repetition
become confirmed, the probability of cure is here slight,
ticularly when the memory & judgement have been impaired

Treatment

Notwithstanding the variety of remedies that have
en used in this disease, it very often baffles the skill
the most able Physician, especially when arising from
reditary Predisposition; the Indications which would natu
lly suggest themselves to the mind are two-fold, first
Endeavour to abate the violence and shorten the duration
the Paroxysm, and second to Prevent its recurrence: —
the first if there be symptoms of determination of blood
e head, or if the patient be of a full plethoric habit,
ding from the arm, jugular vein, or temporal artery, *pro*
nata; but if on the contrary, the presence of debility is obvious

most powerful antispasmodics; sinapisms to the lower extremi
anodyne and antispasmodic clysters:- In general little
can be done during the Paroxysm, than to use the necessary
utions to prevent the patient injuring himself in the violence
the convulsion.- - - - - - The recurrence of the Paroxysm
metimes prevented by the following means:- The disease
oth Symptomatic and Idiopathic;- where it is Symptomat
the primary affection, and as a secondary disease it will
ide, by removing the causes that continue to operate, such
orms, dentition &c; a remarkably powerful stimulant
irritation on the External Surface will often prevent it,
is for this reason Larrey recommends the Moxa;- Issues
Setons have been found useful, by keeping up an action
eakened vessels, they act in a similar way to blisters
rhaps these last may be of some service, but they are
sufficiently powerful;- The Cautery has been used
the Ancients, and I heard the case of a man related,
being afflicted with the disease, was seized with a
oxysm whilst standing near a large fire, he had not
to escape the danger and fell into it, he was rescued
from by his friends, not however until he had severely
ed his arm and part of his face;- he had no attack
the disease until the ulcers had healed although

teris paribus he would have had 4 or 5 — care should
then to avoid all the exciting causes, as over distention
the vessels of the head, however induced; fits of passion
ther violent emotions of the mind; and if of a plethor
habit he should be occasionly bled - live abstemious-
ve Issues or Setons applied in the neck, & kept low
frequent purging &c - If the Paroxysm be preceded
the Aura Epileptica, it has been advised to apply
sters or Caustics to the part from which the sensation
es; to destroy the communication with the brain by
~~cutting~~ dividing the nerve; but without resorting to eithe
these methods, the simply tying a ligature around the
b has been found successful, though the blisters and
stics may produce a double effect both by preventing
advance of the Aura, and at the same time of keeping
a salutary discharge from the body — If the
tem be weak and irritable tonics have been suc
ful, both vegetable and mineral, the latter however
more powerful and durable; the former among
ch the bitters are to be reckoned have sometimes succee
the Peruvian Bark &c but they are too weak & transient
the preparations of Iron, have been used and the Murr.
of Ferri with more success than any of the preparation

* ℞

that metal beginning with 10 drops three times a day.
preparations of Copper have also been used, and a
paration of the Cuprum Ammoniacum known by the
ne of Dr Dicks prescription* has been used with
al success; —— The preparations of Zinc, have
o been used and proved successfull, the exhibition
the sulphate of Zinc, has also been attended with
al benefit; — those preparations should be given in large
s, it is, from the administration of all the remedies, in this
ase in sufficiently large doses, that success is to be an
ipated, and I am disposed to belive that to a neglect
this rule of practice is to be attributed in a great mea
e the want of success in the disease. they should
given so as to produce some sensible effect on the system
e this impression kept up; — Arsenic has been used by
practitioners in Great Britain, & they think with success;
Pulvis Stani, has been successfully used owing no doubt
e small portion, arsenic it contains; — Nitrate of
er, has been used with manifest advantage, I have
its exhibition, in a case which came under the care
y worthy preceptor Dr Revere, in which the medicine
inistered, in doses of from 2 to 5 grs was attended
complete success, & the man 30 years of age is

now entirely freed from his disagreeable associate.
Prussic acid will no doubt become a valuable rem
dy in this, as well as many other diseases; I have
ver heard of it's having been administered;— regular
ercise, either on horseback, walking, or going to Sea, Cold
thing;— change of climate & new mode of life, also are
efficial;— Instances are on record, where persons have
n cured by subjecting themselves to all the hard-
ips and privations of a sea faring life, & that Jul.
sar who was afflicted in his youth with this disease,
s cured by the hardships of a military life;— Elec
city has been recommended, and its exhibition attended
th some advantage.—

Another set of medicines to obviate the mobility of the
stem, are antispasmodics;— Musk, Castor, Ether,
um animale, opium &c; this last in many cases is a
l powerfull antispasmodic, but the propriety of it's
has been disputed;— it is certainly liable to injure
patient, when the disease appears to depend on a debi
state of the vessels, but when it appears to depend on
tability, opium is likely to prove most beneficial.
lerian is another of the antispasmodics, which has
n suffered to lay by forgotten for a long time, it lay

many instances established its claim to a rank among
remedies successful in this disease;— When the
ck can be foreseen by certain well known feelings
the patient, an emetic given a short time before its ap
ach has been known to prevent a paroxysm, a large
of opium or other antispasmodic has produced the sam
t;— Calomel has been used in this disease, and con
ring its use there is some difference of opinion, I
compelled to place some degree of confidence in
remedy;— I was afflicted with the disease for nearly
Years, during which time, every remedy was tried with
success, and until a salivation was induced by
ercury (a course of treatment I adopted myself,) that
iously followed tended only to aggravate the disease,
e the Salivation I have not experienced an attack or
a symptom of the disease, which is now more than
nths;— I have frequently averted an attack by the
ibition of an Emetic; but often, owing to the disagreeable
ure of the remedy, I have deferred it until an attack came
— Sudden impressions on the mind, if they occupy it en
ly, suspend the disease for a time, but if they become
uainted with the stratagem it loses its efficacy— Fear
r & horror, it is to the last passion that numerous sup

tious remedies have owed their success — The viscus —
ercinus, has been much celebrated for the Cure of this
ease, it is given in decoction and may be sometimes of ser
e; but it was principally so in ancient times on account
its being an object of Superstition, for in many diseases
have to attribute success in a great measure, to the in
uence of the Imagination, it is in this way that rings
& amulets have been used with success; — Digitalis
been used with success, where there is an accelerated
se, it should be there given in doses gradually in
ased until the pulse is influenced by it; — Rhus
dicans has occasionly cured Epilepsy, Dupresnoy
& Hufeland have written much in the praise of this
cle; — The Carbonate of Potash, is recommended by
Wiedemann and Michaelis; — Oxygen gas has been
recommended in this disease, and the Gratiola
einalis by Sommer. — These are all the remedies
which I have ever heard or read and all that I
k worth mentioning; all of which I respectfully submit
your judgement and superior abilities, ——

F. I. S. I. S.

To

Nathaniel Potter M. D.

Professor of the Theory and Practice,

of Medicine

In the University of Maryland;

These pages are inscribed as a

Sincere testimony of

Respect and esteem

By the

Author.

To

Doctor John Smyse

of Fredrick County (Md.)

This essay is dedicated

as a testimony

of

gratitude

for many favours and civilities received,

and of respect

for his

Private and Professional character

By

the Author.

Essay
on
Bilious Colic.

large proportion of the human family who are afflicted
h this disease, the obstinacy of its symptoms, the fatality
hich results from its improper treatment, and the ample
rsources of medicine in preventing its evil consequences,
are circumstances calculated to render the investiga-
tion of colic highly interesting. —

Although this disease seldom proves fatal when judi-
ciously treated, yet it is attended with a degree of
torture and distress which make the most eloquent
appeal to the feelings and sympathy of the Physician,
and demand the immediate exertion of his skill.
Deeply impressed with this view of the subject I am
induced to dedicate the ensuing pages to the consid-
eration of this truely formidable disease. The few
remarks that I shall make on the causes, symptoms,
and treatment of the disease, are offered as the result

Jim
or
Military Life.

of careful observation during its frequent occurrence in the neighbourhood in which I reside for the last four years. I have adopted the term bilious colic merely in conformity to custom, this being the term by which the disease is usually designated. So far as the term implies a derangement of the hepatic system, I admit its correctness, but in as much as it also implies a redundancy of bile I cannot subscribe to its propriety — I am inclined to belive that hepatic colic would be more appropriate. We shall first describe the symptoms as they manifest themselves in bilious colic. This disease sometimes attacks suddenly, especially those exposed to dampness or night air during a state of convalescence from a previous attack, and those who have recently suffered from bilious fever. In the generality of cases, however, this disease makes its approach by gradual and insidious steps. — The patient complains of a sense of weight and obtuse pain in the region of the stomach, loss of appetite, costiveness, and pain in the inferior extremities for six or eight days previous to the attack of colic.

After sudden transitions from a warm to a cold atmosphere, or the application of cold water to the feet while the perspiration is free, colic suddenly supervenes in many instances. The disease commences with an acute pain in the stomach or intestines, passing with great rapidity from one part of the abdomen to another, generally most severe about the umbilicus, and is alternated with occasional remissions. The pain is frequently so severe as to cause the patient to roll over the beds, and sometimes even the floor, uttering the most plaintive cries, frequently changing the position of the body to seek some respite from suffering. At the onset of the disease pressure on the bowels affords some relief, but in one or two days they become very tender to the touch. The stomach is in an irritable state from the commencement, and after repeated retchings to vomit a quantity of vitiated bilious matter is ejected. Whether the vomiting be spontaneous or produced by medicine it affords temporary relief from the almost intolerable suffering. The bowels are obstinately constipated from the

commencement of the disease. Thirst and furred tongue are manifest early in the disease. In some cases a discharge of the contents of the rectum is the first effects of the spasmodic action of the intestines, a symptom which not unfrequently deceives both patient and Physician by inducing the belief that the state of the bowels is favourable to the operation of cathartics. The pulse varies considerably according to the stage and degree of violence of the disease. In the early stage, especially in mild cases, the pulse is not indicative of any material disorder in the system, but if relief be not speedily afforded it becomes increased in frequency, fullness and force. In some patients the pulse is preternaturally slow, fully and tense or hard. In some cases where the spasms are very violent at the commencement the extremities are sometimes cold, and the pulse feeble for a time, but a reaction soon occurs, and where much intestinal inflamation exists, as is sometimes the case from neglect of the disease at the beginning, the pulse is quick, small, and hard. A few days prior to an attack of this

disease a yellowness of the skin and tunica adnata is often perceptible, and is a general attendant on the second or third day. If an emetic be given early, followed by the exhibition of prompt cathartic medicines, this bilious suffusion is sometimes prevented. Eructations are very common in the beginning of the disease, and generally afford momentary relief. During the progress of the disease the patient is often extremely harrassed by a troublesome singultus. As this last symptom precedes death from this disease it has been considered as affording an unfavorable prognosis, but I have witnessed its occurrence in many cases where the symptoms were ~~removed~~ without much difficulty by the remedies to be mentioned presently. The nervous systemn is considerably affected in some of the most obstinate cases as is manifested by mental despondency, and convulsive twitchings of the arms. During the autumn of 1824 I witnessed several cases where the whole systemn was violently convulsed. The urine is generally high coloured, small in quantity, and sometimes voided with diffi

culty. The symptoms as detailed above presents the disease in its most aggravated form. It frequently occurs in a milder form, and all the above symptoms are not present. During the period alluded to above, and in the section of the country in which I reside, the disease has prevailed most extensively from the autumnal equinox to the middle of winter, though it may occur, and has occurred at all seasons of the year. When it occured in the summer season it was most inflamatory. With regard to the cause of the disease. I have carefully observed that cases of bilious colic were invariably most numerous after a summer remarkable for the prevalence of bilious intermitting and remitting fevers, and indeed the former may be said to follow the latter pretty generally. From an attention to this circumstance and a consideration of the disease, I have drawn the following conclusion, that marsh miasmata, heat and drought, irregularity, intemperance, and all those agents which produce excessive action in the cutaneous & hepatic secretory vessels, may operate as remote or

x On Tropical climates, art. Dysentery.

predisposing causes of bilious colic. When the cutaneous and biliary vessels are excited from the causes mentioned above, sudden change from a high to a low temperature, exposure to night air, or the application of cold water to the feet, or any other part of the body by suddenly checking their secretions, will be followed by torpor and functional derangement of those vessels too greatly predisposed to such an effect by the previous state of excessive action. The necessary consequences of this torpor and inactivity are, a deficiency in the quantity of fluid secreted, a congestion of the hepatic and portal systems, and with a consequent inequilibrium of excitement in the systems. As an objection to this view of the subject it may be said that the same phenomina take place in other forms of disease— This I readily admit, and agree with Dr. James Johnson, that the "same causes that, applied to one person, will produce bilious fever, will, in a second, give rise to hepatitis; in a third, to mort de chien; and in a fourth, to dysentery"; and I will add in a fifth, to bilious colic &c. according to circumstan

=ces and the predisposition of the persons attacked.

Amongst the various articles that have been enumerated as the exciting causes of bilious colic in this section of the union are, cider, crude fruit, apple-butter, and acid and all accescent articles of diet. —

Treatment.

I shall conclude this essay with a few remarks on the treatment of this disease. The exhibition of an emetic as the commencement of the curative plan, is indicated by the spontaneous efforts to vomit, as well as by the quantity of vitiated bile which is frequently discharged. The quantity of bile thus discharged has given birth to, and established an opinion that the disease is invariably attended by a redundancy in the biliary secretion, which is erroneous. The quantity discharged is to be attributed to its accumulation from an obstruction to its exit owing to the constipated state of the bowels, and not to an increased secretion — indeed there might even be a paucity in the secretion. The stomach being very irritable, and the bowels obstinately constipated, what bile is secreted passes into the

stomach, either spontaneously, or by the first efforts at vomiting. The spontaneous vomiting is not sufficient to remove all vitiated matter from the alimentary canal, and hence the necessity of emetics. They promote a free discharge of vitiated matter from the primæ viæ, prepare the stomach for the reception and retention of purgative medicines, emulge the biliary ducts, rouse the torpid action of the cutaneous and hepatic vessels, and, by their nauseating and relaxing effects, they produce a temporary suspension of the spasmodic action of the intestines. In making a selection from the class of emetics the Tartrate of antimony and potash should be preferred on account of the effects it produces on the bowels and skin, effects not so certainly and effectually derived from other emetic medicines. It may be sometimes usefully combined with Calomel, fifteen or twenty grains of the latter with one or two grains of the Tar: Ant: et potass. Ipecacuanha is frequently rejected too soon on account of its unpleasant odour and disagreeable taste. Purging constitutes an important remedy in the treatment of bilious colic. As respects the choice of a cathartic,

I must give a decided preference to the mild muriate of mercury. This article will generally lie on the stomach, if given in large doses as XX or XLX grains, when every thing else is rejected. Senna is also a valuable cathartic in the disease. The best method to administer it is to give it in the form of pill combined with the [illegible]-murias hydrargyri mitis. By giving the senna in substance in this form we avail ourselves of all its active principles, which is not the case when given in infusion or decoction, and moreover when given in substance it is not so apt to produce tormina. Jalap holds the next rank as a purgative. This root, nauseating and drastic as it is, will often remain on the stomach when others are rejected. The Oleum Ricini will sometimes operate when every other medicine has failed to procure an evacuation. The neutral salts are sometimes valuable, but the stomach generally rejects them. They may, however, often be advantageously used in the form of enemata to assist the operation of other cathartics. Injections of warm water are sometimes productive of good effects. Considerable advantage is some

X Professor of the theory and practice of Medicine in the University of Maryland.

times derived from an injection of XV or XX grains of the tartrate of antimony and potash. A dose of the spirits of turpentine will sometimes take off spasm and open the bowels. Warm fomentations to the abdomen frequently afford considerable relief. Flannels should be wrung out of hot vinegar & water, or hot brandy & laudanum, and applied to the abdomen. Rubefacients of the semina sinapis or Cochlearia armoracia applied to the abdomen are useful auxillaries. If symptoms of acidity in the stomach be present Calcined magnesia will be found useful — It combines with the acid forming a neutral salt, which assists the operation of other cathartics. When the stomach is not very irritable much advantage may be derived from the exhibition of nauseating doses of antimonials. The warm bath when judiciously used is a valuable remedy. In order to derive advantage from its employment Dr. Potter[x] recommends us to "keep the patient in till general relaxation be produced, till the pulse becomes weak, or sickness or vomiting be produced, which is the signal for removal, and then to use friction with hot brandy or spirits." When the constipation is not very obstinate ano-

:dynes may sometimes be given, but they should be combined with purgatives. Calomel and opium is a good combination in such a case. The dose should be liberal at first, and continued in small doses. If ptyalism be produced it seldom or never fails to remove the disease. Venæsection is often unnecessarily employed in the beginning of this disease to remove spasm. Professor Potter directs "blood letting to be used so as to produce sickness in the first stage when the pulse is hard and strong, the constipation obstinate, and the spasmodic contraction violent." When inflamation supervenes upon colic then blood letting cannot be dispensed with. It should be employed generally and locally in conjunction with the antiphlogistic plan generally. Epispastics are useful after the first use of the lancet. They should be large so as to cover the abdomen — small ones only fret the patient without proving serviceable. Epispastics are sometimes also useful in relieving gastric irritability — They are said to promote the operation of cathartics also when applied to the abdomen in cases of obstinate constipation. The above measures should be persevered in till the

bowels are frequently and copiously evacuated. After the disease is completely removed great care is necessary to prevent a return as there is no disease, I believe, that is more apt to return. The diet should consist of such articles as are easy of digestion, as arrow root, sago, tapioca &c. and exposure to dampness, night air, cold, draughts of cold fluids, and irregularity of diet must be carefully guarded against. Flannel should be worn next the skin, and the bowels kept open by the daily use of the Oleum Ricini or some laxative pills. As the time generally allotted for the production of inaugural essays is short, and as elaborate essays on the subject have preceded this, I have not noticed some other remedies recommended by some, as cold affusion, the exhibition of crude mercury &c. suffice it to say, that no advantage, I think, can be derived from the exhibition of the latter, and the use of the former is hazardous, because if it fail to produce healthy excitement or reaction, it will be productive of mischievous effects.

An Essay
on
The Poisonous Effects of the
Rhus Toxicodendron.

Submitted to the
Provost and Professors
of the
University of Maryland
as an
Inaugural Dissertation
For the Degree of
Doctor of Medicine
by
John M. Galt
Of the City of Baltimore

To Thomas L. Murphy M. D.

this Essay

is respectfully inscribed, as

a slight testimonial of

Respect and Gratitude

the friendly Attention & Professional

Instruction

rendered by him

to the

Author

Preface

In entering the arena of medical literature, before experience has sanctioned his professional opinions, the author has to urge as his shield, against the rigors of animadversion and criticism, the fact of his having no desire to seek notoriety, nor the no less culpable fault of "seeing his name in print;" but merely a wish to contribute his mite, towards the liquidation of a debt which the medical community has so long owed the world, namely, that of removing the "shadows, clouds and darkness," which rest upon pathology.

As no writer has (so far as the author's reading has extended) treated of the unpleasant affection, which

results from exposure to the poisonous influence of the Rhus Toxicodendron, he has been induced to offer this imperfect account of it. It is not so much the danger or interest, which is attached to the disease, as the resemblance some of its features bear to other affections of a more important character, which has elicited this description of it

As he has had no opportunity of profiting by the experience of others in this disease, but writes only from his own observations, he hopes the reader will not exercise towards this essay, that critical severity which, perhaps, he would be justified in using towards the production of a Cullen, or a Rush.

On the Poisonous effects of the Rhus Toxicodendron

With a short description of the

Plants

Of the Rhus Genus

We shall begin by giving a short account of the diffeuent species of Rhus, the appearance of the plants, the modes of exhibiting them as medicines, and of the diseases in which they have been employed.

The Rhus Glabrum, Rhus Radicans, Rhus Toxicodendron and the Rhus Vernix, are those to which we shall confine ourselves, as although numerous) the other plants belonging to this genus are not so well known, or so important in practice, as the four I have mentioned above.

1. The Rhus Glabrum, does not posses the acrimony of the other species; it is interesting only on account of the excrescences, which adhere to its leaves, and which are said to equal, if not to exceed the Aleppo Galls, in astringency.

2. The Rhus Radicans, grows upon elevated situations: it may be distinguished from other plants of this species by its, by its attaching itself to trees or other objects, upon which it supports itself, in the manner of a grape vine. It is a very beautiful plant, the leaves being divided into three portions or lobes, which at certain seasons, assume a reddish appearance. "The leaves and bark are astringent to the taste which quality appears to be occasioned by gallic acid, rather than tannin." It also possesses narcotic properties. It has been employed in paralysis, and herpetic eruptions.

It is generally given in substance in the dose of half a grain of the powdered leaves, two or three times a day. There is also a tincture of it which has been some-

times exhibited, and with apparently, good effects.

3. The Rhus Toxicodendron, commonly known by the appellations of Swamp Sumach, Poison Oak &c. differs from the preceding in being a low shrubby plant, the leaves of which are tribobate, smooth and occasionally heart shaped. It is perhaps, possessed of more virulency than any other plant of the species. The flowers are small and shoot out from the sides of the plant. It has been used by Dr. Alderson, of Scotland, with considerable success in paralysis. He relates seventeen cases, in all of which it was usefully employed. His mode of exhibiting it, was in substance in the doses of half a grain thrice a day, or in the form of extract, or tincture.

4. The Rhus Vernix is generally considered as being more poisonous than any other plant belonging to this class of vegetables. It differs from the Rhus Radicans, in delighting in low situations. Although it has been noticed by writers as possessing narcotic properties, we believe it has never been employed as a remedy.

Having given a description of the plants of the Rhus Genus, we shall now proceed to a brief account of a singular affection of the skin, resulting from the application of the poison to the external parts of the body.

Though not a dangerous disease, it is one of the most disagreeable affections to which the human body is liable. Producing a very extensive inflammation of the skin, attended by a most insupportable itching and burning, the patient is kept in such agony, as nearly to deprive him of reason, and during the continuance of the disease, to render life itself, almost a burthen. The disease ~~is said~~ never appears except in warm weather; it is said by M. Van Mons. (who appears to have paid considerable attention to the chemical character of the Rhus) to be produced by a poisonous exhalation from the shrub, which he affirms is "a carbonated hydrogen gas." Whether any degree of credit is to be attached to this assertion, we are not able to determine; but we are aware that the disease may be produced in other ways, besides the application of the plant

itself to the skin. Should the patient receive the dew which falls from it upon any part of his body he will as certainly have the disease and in as severe a form, as though he had handled the shrub itself. He will also receive it by standing to leward of the plant, when there is a strong wind blowing.

Persons are by no means equally obnoxious to the poison of Rhus: there is a complete immunity enjoyed ~~from the~~ by some individuals from the effects of it. The proportion in which they receive it, is perhaps not more than one, in ten or twelve.

What that state of the system is, which renders persons liable to this affection, it is hard to determine. Perhaps it may be accounted for, by supposing the nerves of such subjects to be possessed of a more exquisite sensibility, than those of others, and being thereby rendered more susceptible to the action of the virus.

Persons, by age also become less sensible to the effects of the poison; so that it is seldom or never met with in persons far advanced in years.

We shall now speake more particularly of the symptoms of the disease; of the character of the inflammation; of the structures, which it attacks; of the time of the appearance of the eruption, after the application of the poison; of some peculiarities which bear an analogy to other diseases of a more important nature; and lastly, of the treatment of the disease.

Symptoms. During the first forty eight or seventy two hours after the application of the poison, the following symptoms present themselves. The patient complains of languors or lassitude, great drowsiness and chills; which are succeeded by a hot skin, flushed face, and pain in the head; the eyes are red and watery, there is also great

thirst. If the poison has been applied to the face, the patient perceives a sense of roughness in the mouth and fauces of a very disagreeable nature. The Schneiderian membrane of the nose is also affected, secreting a thin, acrid fluid, which excoriates the parts with which it comes in contact. The arterial system is also considerably excited, the pulse being increased both in force and frequency. The urine is secreted in small quantities, and is of a reddish colour. The patient is also generally costive; if he have an evacuation without the aid of medicine, the feces present a firm appearance, and exhale an odour of a very peculiar nature, which can never fail of being recognized by the olfactory nerves of the patient, if he have ever before had the disease.

In about forty eight or seventy two hours ~~after~~ from the appearance of those symptoms, the eruption (if it may be so called) shows itself, presenting the appearance of innumerable small, white, blisters, filled with a serous fluid.

Its appearance is attended by a most disagreeable itching and burning of the skin, which induces the patient to rub the tops off the vesicles, but which, instead of affording him relief, serves only to aggravate the disease. The vesicles are increased both in size and number by whatever determines the blood to the surface of the body; such as exposure to heat, or drinking ardent spirits; while cool weather, light clothing &c. tend greatly to lessen the severity of the disease.

The disease, like small pox, measles, and others of the exanthemata, has a peculiar affinity for the mucous membranes, as well as the skin: it for instance, very frequently attacks the Schneiderian membrane, the mucous membrane of the fauces, and the extremity of the ureters. In general, it begins to decline in about four days. At the expiration of this term, the serum appears to be absorbed from the smaller vesicles; while the larger

become filled with a thick yellowish pus, which, if the disease have extended to the palms of the hands or soles of the feet, where the cuticle is thick causes great pain. As the disease declines, the cuticle (where it is thin) is separated in large patches, leaving the parts as tender as those of an infant. In other situations where it is of a firmer texture, ulcers are formed, having ragged irregular edges, and a very fetid smell.

In about three or four weeks, the eruption disappears from the whole body, leaving however livid coloured spots, (but no pits) which last a few days longer, but are gradually effaced, and the patient regains his original complexion.

The inflammation, attending this affection is of the erysipelatous character: the seat of the disease is probably the rete mucosum, but the inflammation perhaps may sometimes extend to the cutis vera, beneath.

There is one peculiarity attending this disease to which so far as our knowledge extends, there is no analogy except in syphilis, namely, its occurring, though in a milder form, every year at the approach of warm weather; and that whether he be exposed a second time to the cause or not, until the virus shall have been expelled from the system by mercury.

Upon what pathological principle we are to account for this phenomenon, we are not able to determine; but must content ourselves for the present, with a knowledge of the fact, the truth of which we have had many opportunities of ascertaining.

The treatment of this disease is sufficiently simple. It may be divided into two stages, viz. that before the vesicles have appeared; and that which we are to pursue, after they have shown themselves

1. If the patient be plethoric, and febrile symptoms run high, the pain in the head acute, or the skin hot and dry, blood must be taken from the arm, to the extent of reducing the pulse. It is impossible to describe the relief it affords in such cases; it relieves the headache, and (by inducing a gentle diaphoresis,) that burning heat of skin, which is so distressing to the patient. It also prevents the disease taking on that severe form it is apt to assume, where the lancet has not been employed.

2. As the patient is generally costive, purging should be used, in conjunction with bloodletting. The best cathartics in this disease, are the neutral salts; such as the sulphate of magnesia, or the sulphate of soda; or he may take, the sulphate of magnesia and the calcined magnesia, in combina

tion, as the mixture operates better, than either of the articles would alone.

The skin being in a hot and dry state, the necessity of diaphoretic medicines, would appear to be indicated. The antimonials might perhaps, be usefully employed; but we should carefully refrain from using such as are of a stimulating nature.

The diet, should be light, and consist of easily digested articles, such as sago, Indian gruel, milk and bread, rice, & others of a similar nature.

To allay thirst, the patient may drink freely of barley water, toast and water or lemonade.

We should also avoid the heat of the sun, or of a fire, as warmth has a tendency to increase the severity of the disease. The clothing should likewise be light.

There have been a great number of articles recommended in domestic practice, as External applications, such as, strong solutions of the muriate of soda, solutions of the corosive muriate of mercury, and others of a similar character; but in general they are of little service. The best that we have ever employed is a liniment, composed of Castile soap, blanched almonds, and loaf sugar, rubbed up with rose water to which a small quantity of tincture of cinnamon should be added. This, which has been dignified with the title of "Balsam of Mecca", by the apothecaries, is very soothing, and may be applied to the parts with a feather, frequently throughout the day.

As the disease declines, we may begin to exhibit mercury in small doses, so as slightly to affect the system, as without this precaution, the disease will certainly reappear the following season, at the approach of warm weather.

FINIS

An Inaugural Dissertation
On the
Pathology and Treatment of
Febris Intermittens
Submitted to the examination of
Provost
The Trustees and Medical Faculty
Of the
University of Maryland
For the
Degree of Doctor of Medicine
By
John H. Riggs of Maryland.

In setting out, we maintain, that medicine as a modern science has accomplished much for the relief of suffering human nature, but that it has arrived to perfection, no one will admit who he brings to mind the improvements and discoveries, which are daily making, in the efficacy of remedial agents, of their varied adaptation to the organization, and grade of disease depending upon that organization.

Without further prefatory remarks, we shall make a feeble attempt to discharge a duty devolving upon us, of inviting the attention of the Faculty, to one of the many diseases, with which we are afflicted, this dis-
=ease, is one which has been called Febris Intermittens.

Intermittent Fever, is a disease of low countries, and generally those remarkable for fertility of soil, and mildness of climate, especially where large streams abound it is there the companion of every age and sex, and if disappearing for a time leaving in its subjects, traces of various morbid predispositions. As it is our intention to be brief, we shall not attempt to enumerate those diseases, sup-
=ervening on Intermittents. It may be sufficient to state that reitera-
=ted and prolonged attacks, will eventually break down the constitution of the sufferer, also tend to impair the mental and physical energies, of a greater part of the population, abridging human life and happiness, perpetra-
=ting upon an enfeebled offspring, the misfortunes and misery of their progenitors.

Notwithstanding such is truly the condition of a people labouring under this form of disease, such is their delusion and infatuation, that they deem themselves happy, in being subjected to a disease which does not directly destroy, to the treatment of which they feel themselves competent, and boast with engorged Livers, and Spleens, turnid abdomens, and impending dropsies, of their independence of Physicians. We are confident it will be conceded, that medicine has not accomplished all to be wished for, while a disease like this is treated with levity, or regarded with indifference by those modern writers, who occupy high ground in professional reputation, for it is little short of mockery to limit the resources of medicine for its relief, to tonics, and antispasmodics. In casting our eyes (says Dr Good) over the great diversity of medicines that have been employed for Intermittents we shall find innumerable as they are, they may be arranged under two general heads, tonics and antispasmodics and yet he says whenever the accession of an Intermittent is violent, be its type what it may, it is sometimes attended with very alarming symptoms, as syncope, apoplexy, and vehement spasms, over the whole body.

Nevertheless, when of the Tertian Type, and not violent, or of long duration, it is often serviceable to the general health, and carries off many lurking diseases, of other kinds. We cannot withhold an expression of surprise, that in a work so recent and truly valuable, as Dr

Goods. views, of the treatment, of Intermittent Fever, should be laid before the medical public, so materially at variance with the best practical authorities.

Dr Cullens view of Intermittents, as arising from marsh miasma is generally concurred with in this country, and will probably never be successfully controverted. It places them in their just relation to remittent Fever, and prepares the practitioner to expect in them, all those phenomena which are common to this poison, in its influence over the animal economy, modified generally by type and circumstances. We could but be disappointed therefore, in perceiving that their propagation by sympathy, and contagion, was advocated by Dr Good, admitting however, that marsh effluvia is their most general source.

To those experienced in the treatment of this disease, a caution against the mode prescribed by the learned author in question, (from the supposition of the harmlessness of its character) would be supererogatory, but it may be necessary to guard against the principles on which that treatment is predicated, for it is generally conceded, that this disease is one of a most serious character, in its autumnal recurrence, its inflexibility without remedial means, and when removed the morbid sympathies which succeed it.

Although these results are proper to it, in the conviction of

all, still from mistaking it, as it not unfrequently happens, for a disease of low action, founded and continued in debility, we shall be led to the same course of treatment, as if it were possessed of, the attributes ascribed to it by the author in question.

Intermittents, as well as other fevers, have their seat in the blood vessels, the action of which, under the influence of the heart and arteries, may be that of increased or diminished excitement. At one time the power of the remote cause may be such on the sensorium commune, as wholly to prostrate or destroy the vital functions, again, such will be the recovered power of the heart and arteries, that means the most active are indispensable to the preservation of life.

Causes. So many observations have been made (says Dr Cullen) with respect to marsh miasm, in so many regions of the earth, that there is not any doubt of its being very universally, the cause of Intermittents in all their different forms.

The appearances of this disease occasionally as an epidemic in districts generally exempt from it, is explicable on the principle, generally admitted this side of the Atlantic, that the miasm producing it, is purely of vegetable origin, and liable to be evolved under those circumstances, which combine a luxuriant vegetation, with a humid and heated atmosphere, while sporadic cases may be traced to local accumulations of vegetable filth in the immediate vicinity of dwellings, often in damp cellars, foul yards

and gardens, and in the Barn yards of the Farmer. where vast col=
=lections of vegetable matter are pressed into putrefaction. preparatory to the approaching Autumn. In what this poison specifically consists we are unable to state. Chemistry (which has done much) may yet develope its character, and counteract its influence. What homage will not science owe to him who shall wrest this spoilers power, who maintains his pestilential empire, with such tyrannical domination over our globe.

The opinion (says Professor Potter) that the remote cause of the miasmatic family of fevers, acts primarily on the stomach, and thence its effects are radiated to all other parts, will scarcely bear the scrutiny of a skilful etiologist. We judge (says the learned Professor) that the first impression is made through the nerves, probably the nerves and lungs, upon the brain, and from this great function of power to other viscera. It is generally admitted, that the poison considered as the remote cause, would generally fail to mani=
=fest itself, but for other causes deemed exciting; hence it is found that Intermittents generally supervene upon sudden vicissitudes of temperature, upon exposure to nocturnal damps, or follows close upon the heels of revelry and intemperance, and in short all those causes which exhaust or debili=
=tate body. thereby lessening its power of resistance, against the influence of predisposing causes.

Symptoms.

The approach of a paroxysm of an Intermittent, is marked by lassitude, disinclination to motion, yawning, stretching, weight and oppression in the epigastric region, coldness of the extremities, paleness of the face, with contraction of features; the heat of the surface becomes gen=erally diminished, the pulse small, breathing anxious, anxiety, and oppres=sion about the precordia, sensation impaired, mind weak and restless; a chill or rigor now comes on, frequently attended with uneasiness of the head it now seems impossible to restore heat to the body, the patients teeth chatter, and his entire system is irresistibly agitated, as if pierced by the cold of winter. We have not noticed a case thus strongly marked of long continuance, the reaction of the system is generally more prompt, than in dumb agues as they are vulgarly called, in which the pulse is slower, with but little apparent disturbance of the system.

The cold stage may be said to last from half an hour to one, after which a sudden transition is experienced, as though the patient were transported in so short a time, from polar ices to the heat of the tropics. This transition is often preceded by bilious vomiting, now anxiety becomes extreme, the respiration hurried, there is throbbing and pain in the temples, the face is flushed, the hands, and feet burn, the skin also is hot and dry. the thirst extreme, with restlessness, often with delirium, and incoherence of ideas, the pulse varying accord=ing to the force of the disease, or condition of the system, as bounding, jerking or frequent, with a furred tongue. The febrile stage may be from three to eight hours.

At length a sweat or moisture breaks out over the whole body, and then the febrile symptoms rapidly diminish. The condition of the patient if the paroxysm has been undisturbed, is never perhaps that of health. he is conscious of the impairment of his functions. his head is disturbed, and he complains of heaviness or dizziness. nausea, or want of appetite, his voluntary powers are feeble, his intestines torpid, and she is apprehensive of another attack.

Treatment

In the view we have taken, we believe that the symptoms are so many links in morbid association, by which, if anyone be abstracted, the disease is rendered less perfect, thereby proportionally preserving the balance of the system, and enabling it more effectually to resist subsequent attacks.

The treatment divides itself into two parts. the treatment during the paroxysm, and that in the intervals. During the paroxysm our object is to hasten its different stages, and relieve violent symptoms. in the intervals to prevent a return, by making such an impression upon the nervous system, as may prevent its development. On the approach of a chill, the patient should be laid in bed. between blankets, warm diluents should be freely administered, warm applications made to the sides and extremities, these simple means will generally prove sufficient for the first indication, though not always. the prostration may be such as to require stimulants, as wine whey. brandy and water, sinapisms &c. We should suggest that it is proper or necessary to distinguish a chill prostration, from that Apoplectic form which Intermittents occasionally assume, requiring active depletion, and where the

exhibition of stimulants would be fatal. When the heart shall have come freely into action, indicated by a rapid pulse, a dry and heated skin, with burning extremities, and other symptoms proper for the febrile stage as already given, we are called to the second indication: This we propose to fulfil by a judicious employment of the Lancet.

Persons seized with Intermittents for the first time, who have been vigorous and athletic, will generally be benefitted by moderate depletion, if the symptoms are rather mild; but the employment of the lancet is indispensable, where there are evidences of great excitement, as when the head is very painful, there is lethargy, delirium, a full and rapid pulse or small and tense. But if the febrile symptoms do not run so high it may be dispensed with, provided there be a free evacuation of the Stomach and bowels, which may (be done) by giving an Emetic of Tart. antet Pot. if there be a foul tongue, sickness of the stomach, and other symptoms of a foul stomach, without any pain of (or) great determination to the head, followed cathartics, which carry off large bilious dejections, as the submur Hyd, Jalapii, Gamboy. Rhei. Aloes. and Ol Ricini; the quantity of the evacuation by the lancet or Cathartics, to be governed by their effects, under the observation of the practitioner. The leading indication of cure is to be learned by attending to the liver and causing it to take on a healthy secretion. We deem the use of the lancet of so much importance that we cannot forbear giving the words Professor Potter.

"Bloodletting is often necessary in the hot stage, and in all Intermittents not of very feeble type. the cure is rendered easier by the loss of blood, during the head and back ache of the fit, provided the quantity be regulated by good judgement.

In the cold stage of an inflammatory intermittent Bloodletting is not only justifiable, but

highly useful, if a tense and hard pulse indicates, it shortens the paroxysm, renders the next fit milder, and sometimes performs a radical cure.

By the judicious employment of those means we are disposed to believe on the authority of others, and some little experience that they may be disposed of, with less liability to a second attack, than under the usual mode, or tonics and antispasmodics. To guard against which however we come to consider the means most proper, under the head of —

Prophylactics.

Under this head we might notice many articles, which have been employed with little or no advantage, which have been said to act specifically and without evacuations, but we will not waste time in controverting those points.

We conceive tonics applicable to intermittents as to all other affections, indicated under like circumstances, and to be employed with like views; which are likely to prove pernicious in the hands of ignorance and empyricism, and simple as their abstract character may appear, they are productive of far more injury in the hands of the vulgar, than either the lancet or cathartics

As a tonic we prefer cinchona lancifolia, which is most effectual, given during a state of apyrexia, when practicable should be administered in powder, in as large doses as the stomach will bear, When it disagrees with the stomach, or runs off by the bowels, it may be united with an aromatic or opium, or a few grains of roasted rhubarb; the infusion, decoction or extract may also be substituted, or the sulphate of quinine.

But there are certain states of the system which are found to interfere with the exhibition of bark in any form. The principle of these are, an inflammatory diathesis. a disorder in the prima via. obstructions in the liver and spleen, and others, hence arises the necessity of bloodletting purgatives. or antimonials. and alteratives. previous to the exhibition of bark

In extreme cases, where dissolving sweats, or excessive weakness comes on the use of camphor will prove advantageous, with cordials. as wine. also the sulphate of quinine, in doses of from i to v grs. In these cases, large doses should be given, or it will be so much time lost. There are some auxiliaries, which should not be overlooked, as they are important when the system is prepared, among these we would mention first, solution of arsenic, or what is generally known under the name of Fowler's solution, a very good indigenous article is the eupatorium perfoliatum, and in particular cases would seem to be second to none of them, used in the form of infusion.

The sulphate of zinc. has been given with evident advantage. in the dose i to ii grs. three times a day.

Inaugural Dissertation

on

Cynanche Trachealis

By

John W. Stout.

of Virginia.

Submitted to The Medical Faculty

of the University of Maryland.

1833

Cynanche Trachealis.

An inflamation of the mucous membrane of the Trachea
s obtained this appellation, It is a disease almost
clusively of infants and children — Some authors say that
dults are sometimes the subjects of it, Though we have never
essed an instance of it in any person above ten years of age,
om one or two to ten or twelve years of age appear to be the
ne at which they are most subject to croup. We do not believe
up to be contagious as suggested by some, but it is said to
vail epidemically, Cynanche Trachealis appears peculiar
ome families and a child once having had it will have
excited again by very slight exposure, but probably its after
cks are less severe — The robust and healthy appear to suffer
re than the thin and delicate,

Cold and moisture are the common causes of Cynanche
rhealis, The disease prevails of course in the fall winter and
ing, and particularly in the damps and rainy part of those
asons, It is said to prevail more commonly on the sea
ast than in other places — But as cold and moisture are
e causes it will prevail in many other places, portion-

arly in northern countries. The attack which
enerally comes on in the night, sometimes succeeds
e exposure in a few hours. At other times it does not
me on for several ~~days~~ days, but under such circum-
stances the child appears indisposed. drowsy and
ettful, the eyes appear heavy - he is troubled with cough
that shrill kind, that always characterizes the
isease. The cough and hoarseness increase, and
come more troublesome. The face is red and sometimes
swelled - As the disease advances great difficulty of
reathing prevails accompanied by a swelling
f the parts adjacent to the glottis.

The head of the child is sometimes thrown back in great
agony apparently to escape suffocation.

There is also a peculiar sound attending respiration
in Cynanche Trachealis. compared by some to the
barking of a small dog or fox.

There is generally no expectoration, but when there
is any, it is of a purulent character or of a membra-
nous appearance.

There is great thirst, a continual sensation of heat over the whole body, a disposition to change from place to place. with a frequency of pulse,

Very frequently the symptoms suffer considerable remis= =sion and exacerbation, The disease will sometimes almost disappear in the day and return at night with double violence, If it proceed undisturbed the symptoms continue to be aggravated until the child dies,

When the disease proves fatal it generally does so in one or two days, The character of the disease is such, that if the symptoms are not moderated in the first ten or twelve hours, in bad cases it generally proves fatal, Should the child recover from what has been called the second stage. the convalescence is generally tedious. and is attended by expectoration of portions of a peculiar membrane of which I shall speak presently,

In milder forms of the disease when the symptoms are not so urgent, the cough and difficulty of breathing are generally much abated on the second day-

The skin becomes moist, the fever abates and the voice recovers its natural tone, Doct. Gregory speaks of a spas=modic or spurious croup. The exestence of this form of croup is positively denied by Doct. N. Potter (Profes=sor of Thiory and practice of Physic in the Univerity of Maryland) Doct Potter says that the sonorous sound which has been compared to the barking of a small dog or fox is occasioned by the rigidity of the inflamed parts, Should not such authority put such questions completely at rest? We think it should.

We shall now say something of the membrane that we had occasion to speak of formerly. There have been many dissections of infants that have died of croup, and almost constantly there has appeared a preternatural membrane lining the mucous sur=face of the upper part of the Trachea, and some=times extending down into its ramifications.

This membrane may according to authors be separated from the proper membrane of the part, It has been found separated.

The mucous membrane of the trachea is found entire, but with signs of inflamation, and is covered with a matter resembling pus. This substance is sometimes found in the bronchia in considerable quantity.

After the formation of this membrane the child throws his head back so as to put the trachea on the stretch. This membrane appears to be a secretion of the arteries, of the inflamed part. — Children that have once had an attack of croup should expose themselves to the vicissitudes of the weather with great caution, as the disease is liable to be excited by very slight exposure. A common cold in the predisposed will renew the disease or produce croupy symptoms, until the tenth or twelfth year of life — The utmost care should be taken by those who have children predisposed to this formidable malady.

Doct Gregory has suggested the idea that croup is a contagious affection. It is surprising to us that a man who ought to be so well qualified to decide a question of this kind should take up an opinion so inconsistent. If it is contagious we think it cannot be proved, and

if so should not be admitted, We are of opinion that croup is not more contagious than diarrhoea. or catarrh, and we believe that the idea of the contagiousness of croup is now abandoned by every one whose intelligence has kept pace with our science,,

Authors have divided croup into two stages. The 1st is that of inflamatory action, The second being distinguished by that peculiar membrane previously discribed,

In treating this formidable malady when the febrile symptoms run high and the breathing is very difficult, bloodletting is one of our principle remedies- In slight attacks however emetics assisted by rubefacients to the throat will often give a permanent check to the disease,

Whenever therefore Vomiting and rubefacients. do not afford speedy and effectual relief recourse should be had immediately to the lancet and calomel. Blood should be drawn untill a decided impression be made on the system,

Doct Fanier found bloodletting necessary in all cases, he says it is the essential point of cure. If the patient was plethoric the difficulty of breathing great, with much restlessness

he bled on the second day of disease to fainting.

Blood letting has a twofold effect in croup. In the first place it is the most speedy, prompt and effectual means of reducing inflammation. in the second place it relieves that cerebral congestion and consequent insensible and unmanageable state of the stomach, which so often attends this disease.

Some speak of Vomiting as a troublesome symptom in croup, but this is in direct opposition to our experience, We have witnessed many cases of croup, but never found vomiting a troublesome symptom, but on the contrary almost always found difficulty in producing it, And furthermore we can say that we never knew a case to prove fatal after the stomach had been properly excited,

Doct. Eberle says that emitics should be used at intervals until the disease is completely subdued, After the lancet has performed its office, it may be necessary to resort to blisters. I say blisters because I think it would be better to apply one on each side of the neck than one over the trachea, We think the counter irritation produced by the blister when applied over the trachea is too near the

real inflammation, once as such is calculated to defeat the very object that we so ardently wish to accomplish

In the first stage of cynanche Trachealis particularly of a mild form the inflamation may be frequently stopped by some rubefacient to the part, Spirits of turpentine answers this purpose well, But when the disease is making rapid advances such means will not do, and the Physician who depends on such remedies will find himself sadly disappointed, for he will have to witness the death of his patient, and all the consequent disagreable attendants on such an occasion,

Therefore feeble means should ... not be resorted to when this formidable malady requires the more energetic, such as the lancet. emetics, Blisters. and calomel in large and repeated doses, Croup is we think as much under the control of medicine as any disease. and furthermore we think that no child ought to die of croup, if properly treated from the commencement, Physicians have been too sparing of calomel in this disease, Croup is sometimes a formidable complaint. and requires a powerful remedy, and in calomel we find it, But blood letting should generally be first premised,

The antiphlogistic regimen should be observed throughout. The bowels should be kept open with calomel interposing occasionally a dose of oil,

Should the bowels be difficult to move it may be right to use an injection. The Sulp. Mag. will accomplish this end with sufficient promptness.

Expectorants when properly selected have a happy and desirable effect, Considerable caution should be observed in their selection, Those of a stimulating character should not be used in the inflammatory stage of the disease, They may however become admissible in the second.

We should endeavour after proper evacuations to produce a determination to the surface, Antimony in small doses will accomplish this object better probably than any other remedy- particularly when compared with an equal quantity of the Spiritus Aetheris Nitrosi. experience will we think always determine in favour of the compound in the early stage of croup.

By promptly resorting to the means that we have pointed out the disease will almost always be effectually checked, but by neglecting them and trusting to trifling ones, and thereby

suffering the inflamation to proceed, the practitioner wies pay the forfeit with the death of his patient, which a vigorous and proper treatment might have prevented, Doct. Potter recommends the use of corosive sublimate in that insensible state of the stomach which so often attends the cynanche Trachealis

The corosive sublimate is no doubt a potent remedy in this complaint and when we fail with the others we should resort to this immediately, It is asserted by high authority, that in that insensible state of the stomach, which accompanies croup that it is a safe prompt and efficacious emitic, and arrested the progress of the patient to the grave even when he had reached the confines of eternity,

It is recommended in solution. one grain suspended in one oz of water, of which a tea spoonfull every half hour may be given till vomiting be produced,

One disadvantage attends this medicine it is apt to produce salivation, but it is seldom that it is profuse when produced in this way.

Doct Gregory seems to think unfavourably of calomel in croup, He says that according to his experience

it Has been much over rated, We immagine the Doctor never gave it fair trial, He speaks of giving from one to five grains every two hours, It is evident from this that he had never learned the use of calomel in crops, Such doses in desperate cases are of little or no account, and are calculated to lull the patient into apparent security when he is making rapid strides to his grave,

Calomel appears to be almost a specific in this complaint and when properly administered in conjunction with other means hardly ever fails to effect a cure,

In bad cases the dose should be five or six grains every hour until a change for the better shall take place,

We have said that expectorants are useful and in the latter stage after the inflammatory action shall have been reduced. the Polygala Senega is highly recommend Antimonial wine and assafoetida are useful, The oxymel of squill has been used,

As to the operation we can say but little never having seen it performed, Should the means we have recommended fail, we think the operation will hardly save the patient,

Finis.

Dissertation on Dysentery.

Respectfully Submitted,

To the Provost, Trustees,

And

Medical Faculty,

of

The University of Maryland.

By

Hilary P. Mudd,

of

Prince George's Co. Maryland

1832

Dysentery

This disease consists in an inflammation of the mucous membrane of the intestines; but according to some Authors, it would probably be going too far to say, that in mild cases of the disease there is always inflammatory action of the vessels of the mucous membrane of the intestines, yet in the majority of cases this certainly happens; if not in every case, as I am fully convinced it does in a greater or less degree, and there can at all events be no great error in considering the disease as at all times arising from or strongly tending to such a state. This view of the pathology of the disease is borne out by a consideration of its remote causes, of its symptoms, and of the success of a treatment similar to that which is adapted in other inflammatory diseases.

Dissection clearly points out the pathology of the disease, for ulceration and mortification are here commonly met with, as in the inflammations of other parts. The principal seat of disease in dysentery is the inner membrane of the large intestines, for morbid appearances for the most part present themselves in that part of the alimentary canal, though not unfrequently we meet with them in every part of

the alimentary canal. Dysentery is peculiarly a dis-
-ease of warm climates and seasons: between the tropics
it often rages with a degree of violence of which
no adequate idea can be formed from instances of
the complaint witnessed in this country. There are
three remote causes of this disease, the first being
heat, which is the most common and principal one,
the second is Marsh Miasma, and the third are
certain articles of diet, of which last, putrid meat
is the most common: and therefore the disease must
require a varied treatment, being produced by three
different causes. When it is produced by heat or ar-
ticles of diet, it is accompanied with but little fever,
but when it arises from Marsh effluvia, the fever is
considerable and it assumes the remittent form. Authors
have mentioned a variety of exciting causes, the most frequent
of which are, obstructed perspiration from cold, vicissitudes of
atmospheric temperature, a cold and moist autumn succeeding
a warm and dry summer is peculiarly favourable to the
production of dysentery. it is doubtful whether palpable effluv-
-ations are of themselves capable of exciting this disease, but
their influence in modifying its general character, is freq-
-uently very evident in hot and marshy situations, where

the disease generally exhibits a mixed character, partaking both of the nature of bilious remitting fever and of pure dysentery. In localities of this kind, it is not uncommon to find intermitting fever and dysenteric symptoms succeed each other in alternation. Dysentery seems indeed very often to be the production of the united influence of marsh-miasma and atmospheric vicissitudes; and hence perhaps the almost universal presence of torpor of the hepatic and cutaneous functions in this disease. The atmospheric temperature which is necessary to the production of miasmata, is sufficient also to excite the cutaneous exhalents to inordinate action; whilst both the heat and the miasmata tend, at the same time, to increase the biliary secretion. If in this state of predisposition, a sudden reduction in the temperature of the air occurs; or if the body be exposed to the chilling effects of a humid and cool night air, the exhalents of the surface will be rendered torpid, the blood will recoil from the external to the internal vessels, and the liver, in common with the other internal organs becoming engorged with blood, will not only become further disturbed in its functions, but contribute directly to congestion in the portal vessels, and consequently to the rise of intestinal inflammation; and in this state of the disease the liver is always

more or less effected with congestion, and frequently a total suspension of its secretory action. The night dews of hot and marshy countries are therefore particularly to be avoided; but excessive fatigue and long exposure to the direct rays of the sun appear in most cases to have brought it on. Some stress has been laid upon irregularity of diet, (such as eating abundantly of ripe fruit), as tending to dysentery; but I believe it will not often be produced by such a cause; but eating largely of ~~fat~~ animal substance, which is putrid, will frequently produce it; cold water drank in large quantities, and bathing in very cold water when the whole system is raised to a high temperature often excite the disease. This disease formerly was thought to be of a contagious nature, and perhaps it is so when it occurs in crowded camps, and on board of slave-vessels; but it never is propagated by contagion in a well ventilated atmosphere, as has been clearly proven, by injecting the bloody discharges into the rectum of a healthy person, without producing the disease. Dysentery likewise always leaves a predisposition in the system, which is in opposition to the laws of contagion. When persons have lived on salt provision for some time, and then suddenly change it for fresh meat they will have diarrhoea

and very often dysentery. It is sometimes symptomatic of ty-
=phus fever; this disease appears in our climate of every grade,
and sometimes alternates with others, frequently with ophthalmia,
and persons having this latter generally are not subject to
the intestinal affection: Africans are more subject to this
disease than whites, and in them it is much more difficult
to cure. Old women are peculiarly subject to dysen-
=tery, which is more fatal among them than any others,
and among children next; persons when convalescent from
this disease, are peculiarly liable to attacks of Rheuma-
=tism: It is sometimes mistaking for hemorrhoids, but in
this latter disease, the blood is discharged without mu-
=cus, or if mucus be discharged it is without tenesmus:
the blood also in hemorrhoids is first discharged, and
then the feces, whereas in disentery the faces is first dischar-
=ged, then the blood and mucus, and griping always attends
the evacuations, followed by tenesmus. There are cases of
disentery recorded, in which the intestines have been ulcerated
and pus has been discharged instead of mucus, which
state almost always indicates a scrofulous habit.
The Symptoms of dysentery, are griping pains in the bow-
els, and a frequent desire to go to stool, the evacua-
-tions are small, attended with griping and followed by

tenesmus, and a discharge of mucus mixed with blood, without any admixture of natural faces: preceding the attack, the bowels are slow and there is much flatu-=lence, there is a loss of appetite, the tongue is not often changed, and the greater the hemorrhage, the less pain at-=tends generally. Patients generally complain of a load in the intestines, which they endeavour to throw off by violent efforts of straining, and though they feel them to be ineff-=fectual, yet they are unable to resist them. Small lumps called scybala are sometimes passed, but their appearance are not uniform, nor of any particular importance.

This state of disease in the alimentary canal is always accom-=panied by fever: and in many cases of a highly inflamma-=tory character. The pulse is very frequent, the mouth and fauces dry and clammy. The tongue is coated with a yellow fur at its posterior part, when the disease as-=sumes the remittent type, or has for its origin the combi-=ned powers of marsh miasma and heat. In severe cases the stomach becomes very irritable, the mildest fluids being rejected, while an unceasing thirst prevails, or that state of sympathetic irritation in the whole track of the alimentary canal takes place, by which tormina and tenesmus immediately succeed the [illegible]

swallowing of the blandest liquids. The nervous system suffers also severely in some cases. Dysenteric purging appears to weaken the body very much by its irritating effects on the intestines, which is communicated to the stomach, brain, and the whole nervous system; and in very bad cases, hiccup, cramps of the gastrocnemii, and strangury occur; and great exhaustion of power is evinced in the staggering, or giddiness, and even syncope, which take place when the patient is brought into the erect posture.

The typhous form of this disease is attended with all the symptoms of common typhus, such as fainting, stupor, heaviness, ghastly expression, and calm delerium; watchfulness and headache are often the first symptoms; more decided marks of debility appear; the voice becomes weak, the tongue and teeth brown or black; effectively large or very small stools with great pain or none at all in the bowels; the pulse low, threadlike, and intermitting, with other symptoms of typhus fever, as picking of the bedclothes, cold extremities, hippocratic face and so forth, succeed and close the scene.

The duration of this disease is subject to great variety. Acute dysentery of hot climates often proves fatal in a few days; but in a practical point of view, it is more important

to bear in mind the disposition of the disease to assume a chronic form.

Post mortem appearances. — The true pathological character of dysentery was not well understood, until within the last twenty years. Richter was of opinion that dysentery is a rheumatic or catarrhal affection of the intestinal tube. This opinion was indeed formerly entertained by many pathologists such as Stoll, Vogler, and others. Some Authors allege the cause of dysentery consists in a vitiated state of the fluids which stagnate in the alimentary canal; i.e. the bile or the intestinal mucus and the pancreatic juice. Inflammation of the mucous membrane say they, is not primary in this affection; but secondary, the result of the irritating action of these fluids on the internal membrane of the intestines. Dr. Cullen considered the proximate cause of the disease to be a preternatural constriction of the colon, occasioning those spasmodic efforts which are felt in severe griping, and which efforts, propagated downward to the rectum occasion the frequent mucous stools and tenesmus. It does not appear that he suspected the existence of mucous inflammation as the essential pathological condition of this affection. Later inquiries have shown, however, that an inflamed state of the mucous membrane of the large intestines is invariably present to a

greater or less degree in this disease. In some instances inflammation and its consequences are nowhere but in the Colon and rectum; but frequently more or less phlogosis occupies the whole extent of the intestinal tract from the duodenum to the rectum; But even when this is the case, the signs of inflammation and its effects are always most conspicuous in the large intestines. When dysentery terminates in the early or inflammatory stage, fatally, dissection exhibits the inner membrane of the great intestines thickened and formed into small irregular tubercles of a white or yellow appearance, with thickening of the peritoneal and muscular coats. In some instances, patches of the membrane have been seen in a state of high inflammation: not unfrequently it is found abraded or extensively ulcerated.

This appearance has been seen to extend to the small intestines. In tropical dysenteries the Colon has sometimes been found decidedly in a state of mortification, and faeces have even escaped through the mortified gut into the cavity of the abdomen. With these, which are the true dysenteric appearances, marks of peritoneal inflammation are not unfrequently united. In the bilious form of this disease the liver is sometimes found much enlarged and its whole structure apparently destroyed.

Treatment. The treatment of dysentery is to be regulated by a consideration first of the tendency to inflammation which exists in

the mucous membrane of the intestines, secondly of that apparently spasmodic contraction of the muscular fibres in contact with the diseased membrane, by which the feces are retained; and lastly, of that morbid increase of irritability in the whole alimentary canal, which prevails in this as well as other affections of its mucous membrane. If the pain be constant and severe, and the pulse strong or even, blood should be taken from the arm, particularly in a case which comes early under treatment. When it is inflammatory, and of the bilious remitting type, it can be cured by the use of the Lancet, succeeded by large doses of Calomel. When the disease comes on with nausea and vomiting, with constricted skin, the use of emetics together with the warm bath and friction will often cut it short. The employment of purgatives constitutes the most important part of the cure of dysentery. They must be steadily persisted in until fecal evacuations have been produced, and that sensation of load in the bowels completely removed, which leads to the effort of straining. Then, and not until then may the practitioner desist from the liberal use of his cathartics. Almost every kind of purgative medicine has been tried, and at different times recommended. Provided a due effect be produced, it does not appear to be of much consequence which of them is selected; but the mild and liquid forms are generally to be preferred. When the disease arises

from heat or animal matters. it is not of a remittent character and in this form purgatives, tonics or opeates may alleviate the symptoms, but to cure the disease the cause must be removed. No purgative except calomel will cure that species arising from Marsh effluvia; but in the other varieties it is not more valuable than other mild purgatives as salivation has little or no effect. When the pulse is not very frequent, but the skin constricted and dry, the disease may be removed by a slight salivation. It is a great mistake to use Opium in the first stage of dysentery, as nothing is more apt to kill the patient than the constipation thus produced; it has even been known to produce suppuration of the liver. A large dose of Calomel succeeded by a dose of Oil, will always remove the tenesmus. Calomel has this advantage, it will very often remain on the stomach when no other medicine will; so soon as it comes in contact with the stomach, it causes a secretion to be poured out, and becoming involved in it, does not irritate. In all cases where purgatives are required calomel is perhaps as good as any other; a pill of six or ten grains of calomel, followed immediately by an Ounce of the sulphate of Magnesia, will commonly be found to answer well, and in some cases the Oleum Ricini may be preferable: if the stomach should reject these medicines some other form of cathartic is to be chosen.

In dysentery from heat or articles of diet Tartarised Antimony in combination with some neutral salt, makes a good prescription; given in such proportions as to produce both emetic and cathartic effects. There have been a variety of cathartic medicines recommended in this disease; among which are the extract. Colocy. Compos. Jalap, Rhubarb, and even elaterium: if they have any peculiar virtues in mastering this disease, it is more than I know. I am rather inclined to think they are inadmissible; at all events they are, in a highly inflammatory and remmittent state: there large doses of Calomel and a Oleum Ricini are our purgatives. In the treatment of this disease astringents were formerly much employed. At present however their use in the early stages of this disease are very justly considered as highly pernicious. Cullen was one of the first who spoke decidedly against their employment in this complaint. Although his objections to this use are unquestionably correct, they were not predicated upon just views concerning the nature of dysentery. He supposed that this disease depends on an increased constriction of a considerable portion of the alimentary canal: and concluded, therefore that astringents must do harm by encreasing still more this constricted state of the bowels. The pathology of the disease is, however, better understood at present it being well established that it is essentially connected with a phlogistic state of the intestinal canal as well

as of the general System. It is on this account that astringents act perniciously in the early stages of the disease. They not only tend to increase the general inflammatory excitement of the System, but their direct action upon the tender and irritated surface of the bowels is calculated to do much mischief, by increasing the local intestinal inflammation. They are further injurious by confining the vitiated and irritating contents of the bowels. After the inflammatory symptoms have been subdued, and proper evacuations made from the bowels, the employment of mild astringents may sometimes be resorted to with benefit. In such cases small doses of Rhubarb are among the best astringents. Demulcents are also serviceable, and the best is a decoction of the Slippery Elm bark and Gum Arabic combined with Opium. When the inflammation is removed, the intestines are left in a weakened state, requiring the alimentaria to be very carefully managed; and sometimes Opium must be given to remove the remaining irritability of the canal. In low typhus state of dysentery, sometimes prevailing in hospitals and jails, the remedies must be rapid in their effects or the patient is lost. It must be treated by Opium, bark, volatile alkali, and the warm bath. When patients are convalescent, the bowels may be suffered to remain in a constipated state for four or five days with much inconvenience. The Pulv. Ipecac. compos. either in the dose of ten or fifteen

grains at bed time, or of six grains every six hours, is well adapted to dysentery when the inflammatory symptoms have been subdued; it promotes perspiration, a proper attention to which is very requisite during the whole course of the complaint. The effects of this medicine will be materially aided by the warm bath. The tincture of Kino combined with toasted Rhubarb is an excellent astringent in this disease; blisters are sometimes serviceable. Chronic dysentery is the sequel of the acute stage: it is sometimes connected with structural derangment, particularly ulceration of the mucous membrane of the Colon; and when this is extensively ulcerated, extreme weakness and emaciation follow, and the patient is at length worn out by the incessant discharge which is kept up. The patient will sometimes linger a long time under circumstances apparently hopeless in such a state, the slightest irregularity of diet or regimen aggravates the symptoms. Ulceration of the intestines has been supposed to heal with difficulty under all circumstances but it is obvious that the healing process will go on most favourably, when a light, unirritating, and easily digested food is taken. A gentle action should be kept up also in the bowels, so as to prevent accumulation and distention. Hence we may see the propriety of directing an occasional dose of Rhubarb and Calomel, as ℞ Sub. Mur. Hydrar. gr. iii. Rhei

Pulv. gr. xii. M. F. Pulv. – or a dose of caster oil when there is any considerable degree of griping pain. Benefit has been derived, in many cases of chronic dysentery attended with ulceration, from the exhibition of a decoction of bark, myrrh the aromatic confection, balsam of Capaiba, and other stimulant and tonic drugs, as, ℞ Bal. capaib. gtt. xx. Vitell. Ovi, q. suf. Aq. cinnam. aq. distillat. āā ℥v. Spt. lavand. comp. ℥ß. Syrup. ℥i. M. F. haust. ter die sumend.

When the evacuations are copious, but unattended with pain, and probably kept up by an irritable state of the membranes, astringents, absorbents, and opeates may be required; but in every case their effects are to be watched, and omitted altogether, if they bring on tormina. A mixture composed of chalk ℥ß. Oil of peppermint gtt. i. tinct. Opii ℥i. Mucil. G. arab. ℥viii. take half ounce of this every six hours. Lime water taken freely has an excellent effect, particularly where there is nausea with acidity. The sulphate of Copper in the dose of two grains twice or thrice a day, has been found a useful astringent in chronic dysentery. It not unfrequently happens that the patient gradually recovers his strength, appetite, and flesh, during a moderate state of diarrhoea. In some cases it is found, that small doses of Calomel in combination with ipecac. contribute to an improved appearance of the secretions

of the intestines and certainly is a very valuable medicine.
The complication of dysentery with chronic hepatitis, which is occa-
-sionally met with, will be an additional motive for the exhibition
of Mercurial alteratives. Such are the principles upon which
the treatment of Chronic dysentery is to be conducted.
They should be well understood, because an injudicious practice
may do much harm, though the best regulated may prove
ineffectual

Dissertatio Inauguralis
De Colico Dolore;
pro
gradu Medicinæ Doctoris,
disquisitioni subjecta
Præfecti, Curatorumque
Facultatis Medicæ,
Universitatis Marylandiensis,
a
Gulielmo M. Stone.

"Divi stomachum regem totius corporis esse contendunt, vera niti ratione videntur."

Martii:

Millesimo octogentesimo tricesimo secundo anno.

1832

Facundo et erudito Professori

Chirurgiae in Academia

Marylandiae, Nathani R. Smith

— M.D., haec Thesis respecte

consecratur ab ejus amico

et discipulo,

Auctore.

Gulielmo H. Selby Medicinae Doctori,
hac dissertatio dedicata est a suo vero
amico et pristino discipulo in testimonium
honoris atque amicitiae ob incorruptum ejus
beneficium et attentionem

Auctori.

De Colico dolore.

Quemadmodum luxuriaque elegantia affecta morbos nobis inserunt, sic progressa et continua cultura Medicinae sufficit nobis vires impedire illorum vices.

Colicus dolor, ut morbus frequenter occurrens est, unusque quem ars Medicinalis jamdudum triumphavit, facietur materia conamini sequenti. Is definiatur cruciamentum in ventre comitatum pertinentibus ad Umbilicum torminibusque contractione spastica musculorum abdominis et pertinaci alvi astrictione; non solumque quaecunque in stomacho capitae rejiciuntur; sed etiam in magnis intestinis. Nonnunquam astrictio relaxatioque intestinorum invertuntur

atque actio eorum tam perturbatur ut una pars intestini contracti coacta est in alteram minus contractam: Quod cum ita sit, vocatur Intussusceptio. Cum prorsus motus intestinorum invertitur morbus vocatus est Ileus.

Causae:

Causae remotae sunt multifariae. Sed quae saepissime obveniunt, tantum numerabo. Hae sunt videlicet: Certa conditio organorum pepticorum, ac secretionum Hepaticarum, cibi diversae varietates, foecum retentio, exinanitionis repressio consuetae, ac etiam quaedam res metallicae in ventriculo receptae.

Idemque articularis morbi transitui ab extremis attributus est et creditum

est intestina ipse subjecta Rheumatismo.
Sed quaecunque causae remotae hujusce
morbi sint. probabiliter proxima est
eadem in perpetuum, canalis in=
testinorum motus abnormis.

Ut discernamus Colicum dolorem
Enteriti, necesse est rememisci priorem
pyrexia saepe expertum: et praeterea
alteram diagnosticam indicem
esse, cruciamentum presse augeri
in Enterite, cum Colicum dolorem
ab eodem aliquanto mitigari.

Sunt in Colico dolore intestina
subjecta phlegmonae ac quum id
evenit acerbantur indicia omnia.

Remedia.

Haec prohensio phlegmonae prae=
cipienda est sectione venae. In primis
exta movenda medicamentum cath=
articum adhibiendo.

Sed in nonnullis statibus rerum

violentis augetur constipatio valde pertinax comitata rejectione immodica. Rebus sic stantibus sunt forsitan Cathartici nauseam crescent, Clysteres applicarentur subducentes alvum. Tamen nobis credendae sunt maxime purgationes, quae administrantur frequente repetendis, partibus exiguis, quoque uterenur qualibus gustui minime putidis.

Quamdam purgationum operatio Clysteribus juvetur, quae catharticis intermixtis faciantur promptiora.

Cathartici pendet electio ex varietate rerum cum moribus et constitutione patientis conjunctum.

Quidam Professores Medicinae Submuriae Hydrargyri credunt, ac quum efficaci remedio purgan-

conjunctae, necque est forsitan medicamen efficientius.
Jalapae Radix commendata fuit quoniam stomacho minus ingrata quam catharticorum fortiorum maxima pars.
Remedium utile et idoneum est Oleum Ricini; sed eum non sustineant multi patientes.
Saepe aeger inflatione ventris turbatur, ex qua liberetur pro tempore Aromatibusque stimulis. Posteriora darentur in portionibus minutis.
Ubi penitus purgatus fuit angiportus intestinorum Opium adhiberetur si haud expers doloris aegrotus.
Epispastis Emplas applicatio invenietur utilis spasmos musculorum abdominisque intestinorum leniendo.

Doct. Johannes Eberle inquit, "ut Submuriae Hydrargyri et Opium dati essent in conjunctione commode, ante conatus purgare primas vias faciebatur; ac effectus Submuriae Hydrargyri sustineretur ab paucorum granorum constante administratione in horas tres vel quatuor."

Communiter fomenta callida balneumque tepidum aegro ministrabunt opem. Per syringem injicere violenter aquam tepidam commendatum fuit a DeHaen, pro re spasmos discutiendi. Aqua fontana, cum fusa pro re nata per corporem, stimulavit intestinos prompte, posteaquam modi alii deficiunt. Necesse est per plures dies, exhibendo medicamenta aperientia mitia opportune, obsistere alvi suppressionem.

Methodus preventionis.

Attendere scrupulose conservandae salutis est omnium, sed maxime illorum, qui colico dolori subjecti sunt. Unus impetus facit hujusce morbi secundo obnoxiorem. Itaque ad hunc propensio, si potest fieri, reprimeretur. Efficiatur hoc studiose attendendo victus regimini et excitantes omnes causas vitando. Exercitatio magni momenti. Haec temperata esset atque vecta nonnunquam laboris productioni. Deambulatio omnium diversorum exercitii rationum sub dio anteferenda; deinde Equitatio. Dieta levis quae nutriens quae constaret alimenti concocti facillime. Cum hoc proposito praeponendum est alimentum animale, vegetabili; posteriore patiente magis idonea fermentum acidum.

Interanea diurno usu aperientium
mitium patefacta fuisent. Horum
laudatus fuit magnus numerus
iterum atque iterum: Ex his nomin=
entur Gummi Aloe, Tinctura Aloes,
Radix Rhei, Tinctura composita
Rhei, Podophyllum Peltatum, Oxidum
Hydrargyri, et cactena.
Supra dictorum Oxidi Hydrargyri
ac Radicis Rhei conjunctio indicationem
melius peragit quam alium quidpiam
Aloes pilulumque tinctura saepe inte=
cantum eventu bono, et interdum
decoctum utiliter. Sed hoc remedium
in omnes patientes Hemorrhoidales
affectiones prohibitum fuisset: Sicut
est pronum ficum exaggerare necnon
persaepe excitare quod non ante
extitit.
Persaepe stipatio regula declinatione

leges naturae inserviendo exsurgit. Regimen omnino contra actionem ardentem ageret. Colico dolori obnoxius dormiret valetudinario tepido. vestimentum calefaceret. Zanula gesseretur ad cutem. Habitudinem corporis morbo recidivo erit proprium gerere bibulum pannum longo tempore exinde subsedit morbus. Convalescens speciatim praemonitus esset vicissitudini tempestatis exponere se. Gravis momenti frigoremque humiditatem pedum vitare.

Finis.

on

The chemical properties and Effects
on the animal System,

of

Nitrous Oxide Gas,

submitted to the examination of the

Rt Revd James Kemp, Provost

and

The faculty of Physic of the
University of Maryland.

on the day of April eighteen
hundred and seventeen

For the Degree of Doctor of
Medicine

by William Howard Acte
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To

Elisha De Butts. M.D.

Professor of chemistry in the University of Maryland,

As a trifling mark of esteem,

This essay is inscribed

by

The author.

An Inaugural Dissertation
on
Nitrous Oxide Gas.

In searching through the vast range of Medical science for a suitable subject of a thesis, that which I have chosen, seemed to posess much interest and to promise much advantage in its examination. It was not untill I had advanced too far to recede, that I found it would require much more time and labour than I could command, to discover and gather any of the fruit which is yet hid in this unexplored field. Many experiments which suggested themselves, could not be executed for want of a suitable apparatus. I have been therefore obliged to submit a thesis in which there is scarcely any new suggestion or observation. I have consequently principally collected from the

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writings of Sir H Davy, Murray and others, materials without which I could not have raised a sufficient edifice.

The compounds of oxygen and nitrogen form subjects of the greatest interest to the enquiring chemist. He perceives one combination forming atmospheric air, the source and preserver of the life of the whole animated world; he sees the increased proportion of one of its component parts (oxygen), causing this mild and almost imperceptible substance to be endued with new powers, and exerting the highest dominion over both body and mind; he beholds another addition of this ingredient rendering the compound completely unfriendly to life, and a fourth extending its control over the hardest substances in Nature. Though Proteus like in changing its form, in none has it eluded the grasp of modern chemistry.

The discovery of Nitrous Oxide gas, (the most interesting perhaps of these compounds), is one of the numerous obligations which Chemistry owes to the labours of the celebrated Priestly. In conformity with his theory of its formation, he named it Dephlogisticated Nitrous air, and concluded from some indecisive experiments, that it was unfit for respiration. It was farther examined by the associated Dutch chemists, who called it Gazeous Oxide of Azote and apparently confirmed Dr Priestley's conclusion of its being non-respirable. In consequence of the theory of Dr Mitchell of New York, which supposed it to be the principle of contagion, Sir H Davy was induced to examine more minutely its properties and particularly its effects on the animal system. He first obtained it in a state of purity, ascertained that it could be breathed with safety and gave it the more concise appellation of Nitrous Oxide.

Nitrous.

Nitrous Oxide cannot be formed by the combination of its constituent parts, but is always procured from the decomposition of Nitrous gas or Nitric acid, by substances which attract oxygen - Priestley obtained it by exposing nitrous gas to iron filings, moistened with water; the water being decomposed, the hydrogen at the moment of its production, attracts part of the oxygen from the nitrous gas, and reduces it to the state of nitrous oxide. He also procured it by placing nitrous gas in contact with a humid mixture of iron filings and sulphur, or with the liquid compounds of sulphur with the Alkalis. Kirwan obtained it by exposing nitrous gas to sulphuretted hydrogen, and the Dutch chemists by subjecting it to the action of chloriate of tin or copper dissolved in ammonia, and by passing it over heated sulphur. In all these cases the changes of the nitrous gas into nitrous oxide, is owing to the partial abstraction of oxygen by the substances to which it is

it is exposed.

Nitrous oxide is produced too during the solution of several metals in nitric acid. Priestley observed that it was disengaged during these solutions of tin, zinc and iron, mixed with variable quantities of nitrous gas and nitrogen gas, its production being probably owing to the decomposition of the water of the acid by the metal, the nascent hydrogen of which, presented to the nitrous gas which arises from the decomposition of part of the acid at the same time, partially abstracts its oxygen, and brings it to the state of nitrous oxide. Mr Davy has accordingly remarked, that the metals which when dissolved in a diluted acid, do not decompose water, as mercury, lead and antimony, give out only nitrous gas with portions of nitrogen. Hence also nitrous oxide is produced, as the Dutch chemists remarked, during the solution of iron or zinc in mixed sulphuric and nitric, or muriatic and nitric acids.

Nitrous oxide, when procured by any of these processes, is always rendered impure by small portions of nitrogen and nitrous gases, which cannot be easily removed. The best method of procuring it, for which we are indebted to Berthollet, is by the decomposition of the Nitrate of Ammonia. This salt may easily be made by adding to diluted nitric acid, carbonate of ammonia untill all effervescence ceases and evaporating the solution. As this last procss proceeds part of the ammonia is driven off, the loss of which must be carefully supplied by the addition, at intervals of more of the carbonate, as any excess of acid would materially interfere with the result to be obtained. The salt is different in its appearance and in the quantity of water it contains, according to the degree of heat employed in evaporating the solution. If this be effected at the temperature of 70° or 80°, it will crystallize in six-sided prisms, terminated by

by six-sided pyramids. If evaporated at the 212th degree, the salt will assume a fibrous texture; a heat of 300° leaves it in a white compact mass. These varieties are decomposed at different temperatures. The compact, between 275° and 300° sublimes without decomposition; at 320° it becomes fluid and is partly sublimed and partly decomposed; between 340° and 480 it decomposes with rapidity. The fibrous is not decomposed below 400°. Above 450 its decomposition takes place. In both cases water and nitrous oxide are the sole products. At higher temperatures other affinities are exerted. at 600° the decomposition becomes rapid, a luminous appearance is produced in the retort, and the gases evolved are nitrous gas, nitrous oxide and nitrogen mixed in variable quantities. When the temperature is raised a little higher, as to 700° or 660°, an explosion takes place and the products are water, nitrous acid, nitrous and nitrogen gases

To procure nitrous oxide gas, then, any quantity of nitrate of ammonia, either compact or fibrous, (the latter being prefered by Mr Davy as sustaining less loss by sublimation before its decomposition commences) is put into a glass retort and is quickly raised to the requisite temperature, taking care not to excede 500° and in particular not to raise it so high as to produce the luminous appearance in the retort; this regulation of temperature is easily obtained by the heat of an Argand lamp. The nitrous oxide and water are disengaged; the latter is condensed in the neck of the retort and the gas is received over water, as is it is not immediately much absorbed; it is generally turbid from a small portion of the salt being volatalized; but this is soon dispolved by the water over which the gas is received: and when it is for the purpose of respiration, it is generally suffered to remain half an hour in contact with water to deposit this as well as a small quantity of acid which is generally suspended in it. But in order to prevent entirely the devel-

developement of this acid, (which must arise from an excess of it in the salt,) I would propose the addition of a small piece of carbonate of ammonia, to the nitrate in the retort, which would neutralize the superabundant acid if any were present, and if not, would be volatalized and absorbed by the water through which the gas passes. It might be necessary to avoid the risk of having carbonic acid gas mixed with the nitrous oxide produced, by permitting the first bubbles of air to escape. As carbonic acid gas is rather lighter than nitrous oxide, we need not apprehend its remaining any time in the retort, even if produced. Care should be taken that the nitrate of ammonia is free from any intermixture of muriate, as this, according to Davy, ~~form~~ causes a formation of oxymuriatic acid. From 100 grains of compact nitrate of ammonia about 85 cubic inches of nitrous oxide gas are obtained. One pound gives 4.25 cubic feet, while one pound of the fibrous salt gives nearly 5 cubic feet or 149 quarts.

The (

The theory of the production of this gas by this process, presents a striking instance of a nice adjustment of affinities. Nitric acid is a compound of oxygen and nitrogen, ammonia a compound of hydrogen and nitrogen: the solid salt therefore consists of oxygen, nitrogen and hydrogen; the affinities of which at a moderate temperature are balanced so as to form the binary combinations which constitute the acid and alkali. But when the temperature is considerably elevated, the disposition of these elements to assume the elastic form, subverts these affinities and others are exerted, so as to combine them in different modes and proportions; the hydrogen of the ammonia combines with as much of the oxygen of the acid as saturates it and forms water; and the remaining oxygen of the acid combining with the nitrogen of the acid and the nitrogen of the ammonia, forms nitrous oxide. The proof that this theory is correct, is that none of the simple elements is evolved during

during the decomposition; nitrous oxide and water are the only products and the elements of the salt must therefore necessarily have been combined in this manner for their formation. At a higher temperature other forces are exerted. It appears from Davy's experiments, that nitrous oxide is decomposed by the heat of ignition, as by passing it through a red hot glass tube; it is converted into nitrous acid vapour and a gas analogous to atmospheric air or composed of oxygen & nitrogen loosely combined. Hence when the temperature of the nitrate of ammonia is raised near to ignition, nitrous oxide can either not be formed, or if it be, is immediately decomposed and resolved into these or similar products. As nitric acid is also decomposed at a state of high ignition, it is not improbable, that at this temperature water would be resolved into water oxygen and nitrogen.

Nitrous

Nitrous oxide may be analyzed by a process of this kind, by detonating it with hydrogen gas or by exposing it to charcoal at a high temperature. When detonated with hydrogen gas, the products are water and nitrogen gas; the quantity of hydrogen consumed gives the proportion of oxygen derived from the nitrous oxide, and the remaining nitrogen indicates the proportion of it in the nitrous oxide. In a similar manner when exposed to charcoal, the products are carbonic acid and nitrogen, from which the constituent parts may easily be determined. Taking the mean of the most accurate experiments of this kind, Mr Davy determined it to consist of 63.3 nitrogen and 36.7 oxygen, which proportions when reduced to volume give nearly 2 parts of nitrogen to one of ~~hydrogen~~ oxygen.

Nitrous oxide is permanently elastic. Its specific gravity is, according to Davy, 1614, atmospheric air being 1000; 100 cubic

inches

inches weigh 50.1 grains. It is heavier therefore than carbonic acid gas, the specific gravity of this being 1.519, ~~or~~ 100 cubic inches weighing 46,7 grains or according to Allen and Pepys 47.26 grains. Its taste is distinctly sweetish which is perceived when it is respired, even by some persons, at the surface of the lungs. Its odour is very faint.

This gas is absorbed by water, the atmospheric air of the water being expelled by it: the water at its mean temperature and atmospheric pressure takes up more than half its bulk, 100 cubic inches absorbing according to Davy 54: on boiling the solution, the gas is given out unchanged. The solution has a sweetish taste and a slight odour, to me very disagreable, though Davy prefers it to common water: neither it nor the gas changes vegetable colour

Nitrous oxide gas suffers no diminution of volume nor any change of properties, when mixed with either of the simple

gases

gases. At ignition it detonates with hydrogen gas. It is decomposed ~~at~~ by heat alone, by transmitting the electric spark through it, or by paping it through an ignited earthen tube, it being converted into nitrous acid and oxygen and nitrogen gases.

A property which it possesses in an eminent degree, is that of supporting combustion. A lighted taper burns in it with an enlarged and bright flame, the white inner flame becoming, before its extinction, surrounded with a blue one: phosphorus burns with a dazzling white light, sulphur with a rose coloured flame. The inflammable bodies, however, require to be raised to a higher temperature to burn in nitrous oxide gas, than they do to burn either in oxygen or atmospheric air. If sulphur be burning with a pale blue flame, on introducing it into the gas, it is extinguished: it is only when the temperature has been previously raised, so as to cause it to

(burn)

burn with the blue flame and white light, that it continues to burn; phosphorus which burns in atmospheric air at 100°, does not burn in nitrous oxide gas but when the temperature is above 212°: and charcoal, and the compound inflammables require all of them to be in a state of high ignition for their combustion. During these combustions, a portion of nitrous acid is almost always produced, together with the oxygenation of the combustible body.

Nitrous oxide is capable of forming combinations with the alkalis. They do not ensue when the gas is presented to the alkali either in the dry state or dissolved in water, but only when it is in its nascent state. The following is the procefs by which Mr Davy effected this combination. A portion of sulphite of potash, having a quantity of pure potash intimately mixed with it, was exposed over mercury to nitrous gas. The sulphite of potash decomposes the gas by partially

partially attracting its oxygen and thus converts it into nitrous oxide. This in its nascent state is attracted by the excess of potash present; the sulphurous acid by its farther oxygenation, being converted into sulphuric acid, this acid remains united with its portion of potash forming sulphate of potash. This sulphate of potash and the compound of nitrous oxide with potash are in a great measure seperated by solution, evaporation and crystallization at a low temperature. The new compound consists, as nearly as Mr Davy could estimate of about 3 parts of alkali and 1 of nitrous oxide by weight. Its taste is caustic: it renders vegetable blues green, and on adding to it nitric, muriatic or even carbonic acid, the nitrous oxide gas is disengaged.

Mr Davy succeeded by a similar process in forming a compound of nitrous oxide and soda; but was unsuc-

unsuccessful in his attempts to combine it with lime, ammonia and strontites.

Nitrous oxide gas is absorbed by inflammable liquids and in greater quantity than by water. Alcohol at 52° absorbs more than its bulk and acquires a sweet taste, but its other physical properties are not altered The gas is expelled at the temperature of ebullition and likewise by the combination of the impregnated alkohol with water. The absorption by ether and the results of it are similar. The essential oils absorb it in still larger quantity, as do also the fixed oils, and from both it is expelled unaltered by heat

But by far the most interesting and singular property of this gas, is displayed in its action on the animal system, when respired. It acts as the most powerful stimulant producing a high ~~state of~~ excitement both of body and mind, accompanied with very singular sensations. As before mentioned

mentioned, it had been supposed to be noxious to life. Priestley found that an animal confined in it is soon killed; and the Dutch chemists made similar experiments on birds with the same result, and concluded it to be highly deleterious from a theory they had formed of its agency, that it is incapable of affording oxygen to any substance but hydrogen, and that therefore it is unfit for abstracting the carbon of the blood, the principal object performed by the air in respiration. Mr Davy first observed its singular powers, his attention having been directed to its action, as before observed, in consequence of the theory of Dr Mitchell, who attempted to prove, from some phenomena connected with contagious diseases, that dephlogisticated nitrous gas, which he called oxide of septon, was the principle of contagion, and capable of producing the most terrible effects when respired by animals in the minutest quantities or even when applied to the (skin)

skin or muscular fibre. The following is the description of the effects he experienced from it when he breathed it pure and in sufficient quantity.

"Having previously closed my nostrils and exhausted my lungs, I breathed "four quarts of nitrous oxide from and "into a silk bag. The first feelings were "similar to those produced in the last "experiment; but in less than half a "minute, the respiration being continued, "they diminished gradually, and were "succeeded by a sensation analogous to "gentle pressure on all the muscles, attended by a highly pleasurable thrilling, "particularly in the chest and the extremities. The objects around me became "dazzling, and my hearing more acute. "Towards the last inspirations, the thrilling "increased, the sense of muscular power "became greater, and at last an irresistible propensity to action was indulged "in; I recollect but indistinctly what "followed; I know that my motions "were various and violent." These

"These effects soon ceased after res-
"piration. In ten minutes I had recovered
"my natural state of mind. The thrilling
"in the extremities continued longer than
"the other sensations. This experiment
"was made in the morning; no languor
"or exhaustion was consequent, my feelings
"throughout the day were as usual, and
"I passed the night in undisturbed
"repose".

At another time, after having taken it in smaller quantities, he breathed 20 quarts of pure nitrous oxide, of which he thus describes the effects. "A thrilling, extending from the chest to the extremities was almost immediately produced. I felt a sense of tangible extension highly pleasurable in every limb; my visible were dazzling and apparently magnified; I heard distinctly every sound in the room and was perfectly aware of my situation. By degrees as the pleasurable sensations increased, I lost all connection with external things; trains of visible vivid images rapidly passed through my mind and were con-
nected

nected with words in such a manner as to produce perceptions perfectly novel. I existed in a world of newly connected and newly modified ideas. I theorised; I imagined that I made discoveries. When I was awakened from this semi-delirious trance by Dr Kinglake, who took the bag from my mouth, indignation and pride were the first feelings produced by the sight of the persons about me. My emotions were enthusiastic and sublime; and for a minute, I walked round the room perfectly regardless of what was said to me. As I recovered my former state of mind, I felt an inclination to communicate I had made during the experiment; I endeavoured to recall the ideas, they were feeble and indistinct; one collection of terms, however presented itself: and with the most intense belief and prophetic manner, I exclaimed to Dr Kinglake, Nothing exists but thoughts! — the universe is composed of impressions ideas, pleasures, and pains.

Southey

Southey, the poet, upon breathing this gas exclaimed, "The air of the highest possible of all heavens, must consist of this gas."

Nitrous oxide, when respired produces different effects according to the peculiarities of temperament or situation of the persons, subjected to its influence: in some it produces very unpleasant sensations, especially in hysterical constitutions, while in others no effect is perceptible. But in the generality of cases, when breathed in the proper dose of from 4 to 9 quarts it produces a variety of pleasurable sensations in different persons, which are scarcely describable. I shall only mention a few of those symptoms which ~~often~~ occur most frequently. In about half a minute from the first inhalation, the pulse becomes fuller and exceedingly quick, the pupil is much dilated and a fulness of the head, as if it were swelling to an immense size is often felt, especially on breathing the gas for the first time

time. A feeling of lightness ensues in many instances, in which the slightest exertion seems sufficient to ~~raise the body~~ into the air. A thrilling is felt in the extremities and even throughout the whole body. Ideas succeed each other with great rapidity and an irresistible propensity to action gives occasion to the most violent exertions. These effects suddenly cease in two or three minutes leaving the person in nearly their natural state of mind and body though often in the more susceptible temperaments, a degree of exhilaration is perceived for several hours. — The effect is much greater when the gas is breathed pure, than when diluted with atmospheric air or hydrogen gas. Mr Davy has been able to respire it for 4½ minutes and some individuals for 5 minutes. The larger warm blooded animals confined in it, die generally in five or six minutes, the smaller in one or two minutes. It previously produces

in them

in them, (at least frequently) exciting effects; they become convulsed and soon insensible; and in some the insensibility is induced at first. They live in general twice as long as in hydrogen gas or under water; the lungs are inflamed the blood of a purple red colour and the muscles irritable. Amphibious animals are effected in a similar manner but live rather longer. Fishes put into water impregnated with it are soon affected and die in fifteen or twenty minutes: — and winged insects soon become motionless in the gas and are killed in no long time.

It is not the least of the singularities ~~of this gas~~ in the operation of this agent that the excitement it produces is not followed by languor or debility. No law with regard to the living system, seems more general and invariable, than that when increased action is excited by any agent, it is always followed by a proportionable degree of lassitude and debility.

(Nitrous)

Nitrous oxide furnishes a striking exception to this. Notwithstanding, the high exhilaration it produces, this is not followed by any marked exhaustion but the system is reduced merely to that state which existed previous to the experiment, even leaving for a time alacrity and pleasant feelings. In order to put this to a severe test and to guard against the deception of a single trial, I breathed in quick succession 6 doses of 5 quarts each, without perceiving afterwards the least languor or debility but on the contrary the exhilaration remained for several hours. It must be remarked however, that, though the sensations and excitement were similar and equal in the last doses, to those produced by the first, there was considerable variation in the pulse. At the beginning of the experiment, it beat 63 times in a minute, but increased to 130 by the first dose: it very soon subsided again to 63 and each succeeding dose produced a lessened increase to its (rapidity)

rapidity, the last only raising it to 76. – Sir H Davy, by placing himself in an air-tight box, breathed it mixed with atmospheric air, for an hour and a quarter, and immediately after respired 20 quarts in the common manner The excitement was extreme for a short time but the exhilaration continued two days. He also breathed it daily for two months, without experiencing at any time, the least depression. The gas continued to produce the same excitement in his feelings, but his pulse became gradually almost insensible to its influence. I was not aware that he had remarked this when I made a similar observation

It was probably this gas that produced the exhilaration mentioned by Dr Rush (on the mind. 230) on the authority of a respectable dyer of Philadelphia. He informed the doctor that he had often observed the men that were employed in dying scarlet, to be uncommonly cheerful and sometimes to sing from

sing from morning till night. The odour which produces this is derived from a mixture of cochineal with a solution of tin in the nitric acid". We know that nitrous oxide is disengaged during the solution of tin in nitric acid; we are therefore more disposed to think the effect was produced by this agent, rather than by any "odour", to which Dr Rush has attributed it.

The great power of this gas and the difference between it and all other stimulants hitherto discovered, in not producing indirect debility, seem at once to mark it as a valuable addition to the Materia Medica. ~~Its~~ At its first discovery, philanthropists hailed with enthusiasm its introduction into medicine, and saw in prospect, a whole army of diseases retreating at its approach. Physicians finding these extravagant hopes not immediately realized, have deserted them altogether.

Believing

Believing myself, that at some future period, nitrous oxide gas will probably hold equal rank in the materia medica with even mercury and opium, I shall venture to suggest some few diseases in which it might, even with our present imperfect knowledge of its effects, be productive of much advantage

Before doing this, however, it will be proper to make some remarks on the modus operandi of this powerful agent. Some philosophers have supposed its action to be immediately on the nerves at the surface of the lungs, exciting the brain and whole system by sympathy, in the same manner as alcohol is generally supposed to produce its effect when applied to the stomach. Another and the more probable supposition is, that it is absorbed by the blood communicating to this a specific highly exciting power over the nervous system. The following considerations support this doctrine.

vs

1st Sir H Davy, in experimenting on this subject, observed that the hearts of animals killed by being immersed in this gas, always contained blood of a peculiar purple red colour. This same colour he observed to be always produced in venous blood ~~when~~ out of the system, when it was exposed to and absorbed nitrous oxide gas. He describes it as an entirely different hue from that of blood in any other circumstances. Dr Beddoes also saw this colour evident in the wound made by a leech in the arm of a person under the influence of the gas. (Davys researches pag 545).

2ly In accurate experiments made in breathing nitrous oxide by Davy, a large portion always disappeared. As the lungs were brought to the same ~~state~~ degree of exhaustion in the beginning as in the end of the experiment, we can account for the diminished quantity of ~~gas~~ air in the lungs and airholder, only by supposing some of the gas to have been absorbed by the blood.

3ly The

3d The time required to produce the effect, being what we might calculate to be necessary for the blood to pass from the lungs to the brain

4th Sir H Davy took into the stomach several ounces of water highly impregnated with nitrous oxide gas, without any effect being produced on the nervous system. This experiment I have repeated, drinking a pint of saturated water without experiencing the least change in my sensations or pulse.

We cannot then suppose that it acts on the nervous system of the lungs, when it produces no effect on the more sensible nerves of the stomach.

Nitrous oxide has already been proposed as a remedy in several diseases as Palsy, suspended animation tetanus, typhus ~~gravior~~, and mania

In Paralysis it has been tried by Dr Beddoes in many instances with general but only moderate benefit. It is evidently improper where any apoplectic symptoms

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symptoms or those making considerable
pressure on the origin of the nerves, are
present.

In cases of suspended animation, it
seems to be clearly indicated, though the
difficulty of suddenly procuring it and
the urgency of the case, must always
preclude its employment

In tetanus it seems probable that
the power it possesses over the muscular
system, may overcome its morbid excitement,
according to the law that no two diseases
can take place at the same time in
the same part. It seems also to coincide
with Dr Rush's practice in this disease.

In typhus and coma, a stimulus
of greater power than any used in
present practice is certainly a desideratum.
This stimulus, not inducing indirect
debility, seems to render it more proper
in this disease, than those commonly
used which all belong to the class
of narcotics.

In some diseases of the mind,
particularly in hypochondriasis, Nitrous
oxide

symptoms or "those making considerable pressure on the origin of the nerves," are present.

In cases of suspended animation, it seems to be clearly indicated, though the difficulty of suddenly procuring it and the urgency of the case, must always preclude its employment.

In tetanus it seems probable that the power it possesses over the muscular system, may overcome its morbid excitement according to the law that no two diseases can take place at the same time in the same part. It seems also to coincide with Dr Rush's practice in this disease.

In typhus and coma, a stimulus of greater power than any used in present practice is certainly a desideratum. This stimulus, not inducing indirect debility, seems to render it more proper in this disease, than those commonly used which all belong to the class of narcotics.

In some diseases of the mind,

oxide may probably be substituted for opium with the highest advantage Dr Rush speaking of the use of opium in this state of mania says "This noble medicine, which has been happily called the medicine of the mind has many advantages over ardent spirits as a cordial. It affords more prompt relief and a habit of attachment to it is more slowly formed and more easily broken". In how much greater degree have we reason to suppose these terms applicable to the remedy now proposed

The probable utility of this gas in dropsy, suggested itself to me by an observation of Davy's, that, in the animals killed by the influence of Nitrous Oxide, the bladder was invariably full which was not the case with those whose death was produced by other means. A considerable diuretic effect I have observed to be generally immediately produced by two or three doses taken in quick succession.

Before finishing the last of my collegiate duties, I must seize this occasion of expressing my gratitude to the professors of this institution, for the instruction I have derived from their lectures and also for many marks of friendship I have received from many of them as individuals.

Before finishing the last of my collegiate duties, I must avail this occasion of expressing my gratitude to the professors of this institution, for the instruction I have derived from their lectures and also for many marks of friendship I have received from many of them as individuals.

A

Dissertation on Hepatitis

Submitted to the
Consideration
of the
Provost, Professors, and Trustees
of the
University of Maryland
for the
Degree of Doctor of Medicin
by
Michael N. Diffenderffer
of
Baltimore
Maryland

1833

To

Doctor Isaac Cole

Under whose able guidance
I have prosecuted my Medical Studies this essay
is respectfully inscribed

By his Friend and Pupil
Michael N. Diffenderffer

Introduction.

Among the many difficulties which the Medical Student has to encountre that of preparing an Inaugeral Disertation is not the least trying. The selecting of a subject adapted to his experience, ability and information perpleyes him. & when selected he is aware that it must undergo the stutiny of men whom fame has placed in the first rank of the profession and to whom many of his views must appear false and unfounded, But one reflection is at least encouraging that the Medical Faculty of the University of Maryland are not less characterized by their skill and learning than by their candour and liberaity, qualities which will ensure him not only a lenient criticism but if necepary a mild and generous indulgence. Impresed the truthes of these remarks I have been induced to offer to the Consideration of the Faculity the following brief remarks on

Introduction.

Hepatitis I do not claim the meed of originality this cannot be expected from a mere — pupil in the school of medicine, All that I desire is that the selection I have made of the opinion of others may be found to be judicious and correct — .

Hepatitis is defined an inflamation of the Liver and is devided into acute and Chronic This organ as well as any other internal organ is liable to active and accute inflamation, In the more Northern regions the dipease generally attacts the lungs and intestines in its most inflamatory form. As other inflamations it is generally ushered in with a chill attended with a paleness of the countenance, small and quick pulse! — When inflamation makes its attack suddenly and violently the patient is seized without any premonitory symptoms with great pain in the right Hypocondrium difficulty of sitting with the body bent forwards Sometimes the lungs and liver are at the same time both affected either hereditary or acquired and the pain alternating with the other being accute in one while there is little or none in the other — In the more milder regions the dipease comes on more slowly the person feeling but slight pain in the Right Hypocon-

rgum with slight fever before the dipease makes
its appearance – a general attendant on Hep-
atitis is a scalding of the Urine supposed to
be produced by the passage of the bile along
the Urinary organs, which symptom authors
neglect mentioning it is observed that when
inflamation attacts the internal surface of
the liver the pain is very distrepsing and he-
avy but when the ligaments are affected it is
obtuse and pungent – — Prepure on the af-
ected side generally increases the pain the
patient finding more ease lying on the
left side. General Dymptoms ——— A
ough caused by the liver lying in contact
with the diaphragm pushes the diaphragm
gainst the ~~liver~~ lungs, Nausea, and vomi-
ing, white of the eyes have a yellow cast, Hot and
ry skin pulse full and active but this is
ot always the case sometimes the pulse is hard
mall and quick. Diarrha is generally one
f the premonitory symptoms of this dipease

when this is the case the patient is seized with griping like disintery and the discharges slimy and watery —— The most characteristic symptom is pain in the right clavicle supposed by some when under the right clavicle the right lobe of the liver is affected and in the left clavicle the left lobe, the pain in the clavicle is produced through the medium of the diaphragmatic nere arrising from the brachial pleyus of nerves the liver becomes enlarged presses against the diaphragm the nerve is included and the pain is caused in the clavicle through its medium, The state of the bowels enables us to judge of the presence of Hepatitis for in almost all cases where the liver is inflamed the bowels are either constipated or affected with disenteric irritation. Diagnosis ——
This disease is generaly confounded with other diseases such as the Stomach and lungs it is distinguished from a disease of

Stomach by its full and hard pulse pepure
on the right side wheras prepure on the ep-
gastric in the dipease of the stomach causo
most pain - from Neumonia by inspi-
ation which will not augment the pain
in Hepatitis as it does in pulmonic in-
flamation, from a spasm of the biliary
ducts occasioned by a calculi it may be
distinguished by its strong febrile excitement
Terminations _____ - This dipease ter-
minates in resolution, supuration, and gan-
reen its termination in gangreen is doub
ed ever to have occured the dipease either
destroying the subject or terminating in
health before the form of gangreen has time
to appear, but it has bein known to have
occured though very rare. The termination
of accute Hepatitis in supuration is not
uncommon when it takes place the symp-
toms are clearly marked, hectic flushes re-
mission of pain, and irregular state of the

bowels, night sweats and throbbing in the liver
If the abscess points towards the diaphragm
we will have cough and symptoms of pul-
monic irritation, if towards the stomach
there will be great gastric irritability and
if the matter escapes into the stomach
death will immediately follow, When
the abscess burst in the cavity of thorax
the contents are sometimes discharged
by expectoration this form is considered
to be immediately fatal, but from the
experience of some celebrated authors this
discharge has been known to have been
followed by the complete recovery of the
patient - but the prognosis is in gen-
erral very bad ———————————

There is a case related of an Hepatic
abscess penetrating through the diaphragm
into the lungs and giving rise to all the
symptoms of Phtisis Pulmonalis and
soon afterwards the matter found a-

route by the intestinal canal and the patient entirely recovered — When the abscess points externally it must be opened immediately to give vent to the pus for if it be left to the ~~effort~~ efforts of nature the constitution would be ruined before the contents could have an exit. Causes Marsh effluvia which acts by impairing the energy of the nerves through the medium of the sensorium deranges the biliary functions in combination with atmospheric heat the liver is morbidly excited and therefore vicissitude of weather and every exciting cause would very soon cause inflamation to be fully developed — Any inordinate action on the stomach will produce it in this case the face will assume a pallid hue, emaciation, irregularity of bowels, sallow countenance, swollen abdomen, Ardent spirits will produce it by causing an in-

creased irritated secretion in the stomach, the irritation of dentition in children, rage - terror, — Heat is clapsed as one of the causes — The effect of heat in the Hepatic system through the medium of the skin is well known, deranging its functions & predisposing it to inflamation — But I am persuaded to believe that accute Hepatitis owes its existence to the application of cold and my reason for so believing is this, that heat by increasing beyond the natural standard the biliary and cutaneous secretions debilitates the vessels by which these secretions are carried on and the application of cold renders them more easily struck torpid, the consequence of which is the obstruction of the transmission of blood from the portal to the general circulation, which is the whole source of accute Hepatic inflamation ——— Blows, and external

violence have been known to produce it. A case is related of a gentleman who fell from a height of twelve feet and struck his right side against a ladder, After the lapse of a few days accute Hepatitis came on and the symptoms were subdued by the ordinary means, Six months after this accute attact, another attact of inflamation came on which terminated in an abscess which burst through the diaphragm in the lungs destroying the patient in nine or ten days from the appearance of matter in the expectoration, There is one cause supposed to be legitimate that is the use of the Narcotics, No one will doubt the strong sympathy existing between the biliary secretion and cutaneous exhalents and therefore whatever increases or decreases the action of the cutaneous exhalents causes an increased or decreased secretion of the liver.—

The secretion of the capilaries and liver being at the same time stopt the circulation of the blood through the live is obstructed an action takes place and congestion being already present affects the system and gives rise to inflamation. The great sympathy existing between the liver and skin is illustrated in the Chronic form of this dipseare. where there is a dry and rough skin being almost impopible to excite a general perspiration. — Jaundice —

This affection is characterized by a yellow tinge of the skin, a deep brown colour of the urine, clay and pale like appearance of the stools, lassitude, langour, depresion of spirits, bitter taste in the mouth, flatulence, indigestion, and generally torpid bowels. The cause of this complaint is considered to be the obstruction of the free papage of bile from the excretory ducts,

of the liver This complaint arrises from a number of causes, free use of ardent spirits, Calculi, &c — Anger will so derange the state of the bile as to produce jaundice in a few hours, jealously, grief, there is no doubt that mental emotions are often the causes, —— For the cure of this complaint the great principle is to remove the obstruction to the free egress of bile from the liver to the duodenum, the mode of treatment is according to the nature of the cause if it arrise from calculi we should despair of cure without we could get something ~~to~~ in the circulation to act on the calculi which is impopible —— Blood letting warm bath, emetics, purgatives. A bath of Nitro Muriatic Acid is very serviceable it effects the glands in a peculiar manner, it alters the secretions, increases perspiration and

excites a peculiar action in the solids and fluids this is another proof of the strong sympathy between the liver and skin —.

Treatment. Blood letting is the primary remedy in the treatment of accute Hepatitis in order to lessen the momentum of the circulation and remove the congestion so as to prepare the system for the effects of mercury, then the exhibition of Calomel in doses from ten to twenty grains as a cathartic followed by castor oil or senna, Local bleeding is necessary application of leeches to the Hypocondrium it should be carried to the extent of relieving the pain or to enable the patient to bear prepure over the liver, Cupping is better than leeching we can in a shorter time abstract more blood by cupping, Blisters should succeed the local bleeding — It is absolutely necessary to keep up an active purgation throughout the whole course of this dis-

ease, Calomel in combination with Opium has been highly recomended used so as to produce moderate ptyalism in doses of from five grains of Calomel with a half a grain of Opium given every four or five hours In the course of this treatment an occasional use of some mild cathartic is necessary. Frictions of Unguentum Hydrargyrum is used when the mercury is tardy in its operation. Diaphoretics. Pulvis Antimonialis in combination with nitre. In Hepatitis depending on a calculus in the gall ducts we should employ active purging and the exhibition of alkalies. Warm bath. When suppuration has taken place we should stop the use of Mercury, cupping or the application of leeches near the swelling and warm poultices with a view of promoting the pointing of the abscess the bowels should be gently kept open with the sulphate of magnesia, Nitric and muriatic acids in

cogneil parts is administered internally from
a dram in a sufficient quantity of water
to be taken once every day When given inter-
nally it should be given through a quill
in order to prevent the acid from injuring
the teeth, Nitric Acid in combination with
Hembane or laudnum is used. Chronic ——
Hepatitis —— What is meant by chronic hepatitis
is sometimes a inflamatory condition of the
arteries accompanied by a derangement of
the billiary functions and sometimes a con-
gestion of the veins — the venous congestion
of the liver is characterized by creeping chills,
paleness, of the face, cold feet, when inflam-
tory action is going on the patient will
complain of hot skin, irritability of the pulse
light thirst and high coulored urine, these
forms appear to alternate with each other
the congestion appearing to be the cause &
the excitement the cure of the congestive state,
therefore these forms constantly alternating

with each other should always be taken in connection —. This form of the disease makes its attact in a slow manner without any symptoms of severe indisposition and it will even run into suppuration or an organic induration before its existence is discovered. Indigestion, nausea, and vomiting slight pain in the abdomen are the most prominent features — The relief which is commonly obtained by purgatives in the expulsion of the fecal accumulations whereby the pressure of the contiguous organ on the liver is taken off contributes to keep up the delusion — a heavy dull pain in the Right Hypocondryum pain on pressure of the affected part — In this form we have the pain under the clavicle in the shoulder joint, and is often continued down the thigh and whole of the leg so as to cause a paralysis of the whole of that side the cause of this disease is supposed to be owing to the accute form of this disease or the

slow opperation of the same causes this latter appears to be the most likely cause ——— We should belive that Marsh miasma is the whole cause of this dipease upon its long acting upon the system in marshy districts ——— In the Post-Mortem appearances of the liver it is found generally to exibit an ash coulored appearance Abscepes are found and sometimes tubercles scattered throughout the substance of the liver —

Treatment ——— General bloodletting is hardly necessary in this form of Hepatic inflamation. the application of cups to the epigastric region is found to be very advantageous, Sopt poultices to the Hypocondryum and a mecurial appurient every night, light and digestible diet a careful avoidance of vicissitudes of weather, blisters, frictions of tarter emetic ointments and counter irritants ——— Mercury in form of blue pill, exibition of cathartics as may be deemed necessary as neutral salts, Rhubard Jalap &c change of air the removal to a warm

...mate will very often have the desired effect

Michael N Diffenderffer

An Inaugural dissertation on Dysentery

Submitted for examination to the

Provost, Trustees and faculty of Physick

of the University of Maryland

on the 1st day of March 1831

For the degree of Doctor of Medicine

by

Albert Eley Wrenn

of

Smithfield Virginia

Preface

In the subsequent investigation little else can be expected than to recapitulate in a very imperfect manner some of the opinions of preceding writers.

As there is no pretension to originality in any part of the following essay; as the parts which are extracted from authors, can be easily distinguished by every medical reader, and as I here make particular acknowledgements to those authors. I hope to be excused for omitting minute references to them.

Although I make no pretension to originality, and acknowledge the following essay to be taken from authors, yet it is imperfectly done, and he who would do justice to such a subject, should possess talent, leisure and industry. To a deficiency in the two former points, many of the imperfections of the following essay may be justly ascribed. Instead of som months, or rather weeks, could a few years have been devoted

to its execution, it might have been less imperfect, and consequently less unworthy of the acceptance of the reader.

However, the laws of the University of Maryland, of which I have the honour of being a student, requiring that I should make this attempt, I flatter myself, that your zeal to encourage such an attempt will draw the mantle of forgetfulness over its imperfections. Therefore with great diffidence it is submited to your inspection.—

Dysentery

The flux or bloody flux, (from the two Greek words δυς, difficulty, and ἔντερα the bowels.) is a morbid affection of the internal surface of the large intestines, and sometimes of the small, the disease is principally characterized, by frequent mucous or bloody discharges from the intestines, while the proper feces are retained, together with griping, and straining at stool and some fever.-

The word dysentery as used by the ancients had no very precise signification but was applied to affections of the bowels in general, for we find Hippocrates using it, not only to signify all ulcerations, but all hæmorrhages of the intestines. Neither was Galen more precise in his definition, sometimes defining a dysentery, an ulceration of the bowels, at other times mentioning four species of the disease, all with bloody stools. Celsus more rightly limits the sense of the word, and restricts its meaning to an ulceration of the bowels

attended with tormina, tenesmus; and with
mucous and bloody stools. Although this notion
of the constant ulceration of the bowels in conjunction
with dysenteric symptoms, prevailed for a long
time; and although it be true, that the
bowels are liable to ulcerate in true dysentery,
yet it has been fully ascertained by the dissect-
ions of the moderns, that ulceration is accidental
and not essential, and that instances of fatal
dysentery in which the intestines were sound
are more numerous than those accompanied
with ulceration. For this assertion we have the
authority of Morgagni, Cleghorn, and Pringle, and
it is now generally understood, that ulceration
takes place only in the advanced or chronic state
of the disease

This disease occurs especially in summer
and autumn, at the same time as does autumn-
nal intermittent and remittent fevers and with
these it is sometimes combined or complicated
Dysentery is a species of enteritis— an inflamation

of the mucous lining of the intestines, chiefly confined to the large ones, and is accompanied either with diminished or increased secretion of mucous.—

In dysentery, I have observed (says Professor Smith) in one of his medical journals) that the severest cases are not attended with the most copious mucous discharges. This is because the membrane is too intensely inflamed. It is then highly irritable, and the efforts at stool are frequent and ineffectual.- When the mucous is copious and without blood, it indicats a lower degree of inflamation, and the discharge itself is a source of relief, as it depletes the engorged vessels, precisely as catarrh is relieved by copious expectoration.)

The disease sometimes begins, as Sydenham observes, with cold shiverings, heat and other febrile symptoms; but in other cases the feverish symptoms are not felt, but a griping and a pain about the pelvis and loins, with much

flatulence; and a constant inclination to go to stool, while the belly is costive. Sometimes though more rarely, some degree of diarrhœa is the first appearance However in whatever way the disease commences, it soon puts on its characteristic appearances. On indulging in the disposition, to evacuate the intestines which by degrees becomes more frequent and urgent, and which the patient is unable to resist, but little is voided except, watery, mucous, or bloody matter, without any admixture of natural faces, and the tenesmus becomes more considerable, This sympton (tenesmus) the most distressing of dysentery, arises from the extreme morbid sensitiveness of the mucous lining of the intestines, in consequence of which it cannot bear the contact even of the ordinary contents of the alimentary canal, much less of the acrid bile, the crude, half digested aliments &c, which result from the general disorder produced in the digestive organs, The membrane being thus irritated excites, by sympathy, the muscles of the bowels, and of the abdomen to

expel the cause of irritation. The frequent efforts which result, aggravate the engorgement already existing, and exalt every symptom of the disease. The intestines are made to contract irregularly and convulsively upon their contents, in such a manner as to mould them into scyballa, and violently compress them, without, transmitting them along their canal. If a purgative be administered, and operates well, it carries off the scybala, which are apt to continue in the upper part of the alimentary canal, and keep up irritation, When these scybala are voided a remission of all the symptoms supervenes and more especially that of the tenesmus. This state of disease in the alimentary canal is always accompanied with a loss of appetite and frequently sickness; nausea and vomiting also affecting the patient. — At the same time there is always more or less fever, which is often of the remittent kind, and observes a tertian period. In many cases the fever is of a highly inflammatory character. The pulse is very frequent, the

mouth and fauces dry and clammy. The tongue is covered with a dark fur in the centre; or when much bile is secreted, with a yellow fur at its posterior part, or it is red and polished. In severe cases the stomach becomes very irritable, the mildest fluids being rejected, while an unceasing thirst prevails: a that state of sympathetic irritation in the whole tract of the alimentary canal takes place, by which tormina and tenesmus immediately succeed the swallowing of the blandest liquids. These febrile states continue to follow the disease through its whole course, especially when it terminates soon, in a fatal manner. In other cases the febrile condition almost entirely disappears, while the proper dysenteric symptoms remain for a long time after.

The nervous system also suffers severely; nothing seems to weaken the body so much as dysenteric purging. In very bad cases, hiccup, cramps of the gastrocnemii, and stranguary occur; and great exhaustion of power is evinced, in the staggering or giddiness,

and even syncope, when the patient is brought into the erect posture.

It is not the evacuation by cathartics which causes this abject state, but the effect of the irritable state of the intestines, communicated to the stomach, brain and whole nervous system. The violence of the tenesmus causes universal sympathy, and for purging by medicines, abates or removes the pain and consequent debility. We are aware (says professor Potter) that there is a dysentery of a low death like debility, in hospitals camps, ships, and occasionally in old persons; and that in such a state we cannot employ evacuants. We sometimes succeed by opium, cinchona, wine and other cordials, but it is the most intractible fever we have had occasion to treat.) Dysentery is a disease subject to great variety, and of various duration in different instances. When the fever attending it is of a violent inflammatory kind, or when it is of a putrid nature, the disease often terminates fatally in a very few days,

with all the marks of supervening gangrene; but we should bear in mind the disposition of the disease to assume the chronic form. When the febrile state is more moderate, or disappears altogether, the disease is often protracted for weeks, and even for months; but even then, it often terminates fatally. In some cases the disease ceases spontaneously; the frequency of stools, the griping and tenesmus, gradually diminishing, while the natural stools return. In other cases the disease with moderate symptoms, continues long, and ends in a diarrhœa, sometimes accompanied with hysteric symptoms. The symptoms of dysentery vary according as it is of the inflammatory the remittent or typhous type. In the inflammatory form the symptoms are more intense; there is a more fixed and violent pain in the abdomen, with great heat in the integuments, and skin generally; the evacuations consist of blood and mucous, or bloody serum, and great desire for the coldest water, a white and furred tongue,

the pulse febrile and quick, or full and bounding. It sometimes proves fatal in a few days. In the remittent form, nausea, bitter taste in the mouth with bilious evacuations, distinguish it.

In the typhous form, fainting, stupor, heaviness, ghastly expression, and calm delirium, with discharges from the mouth of green bile; watchfulness and headache, are often the first symptoms, more decided marks of debility appear, the pulse becomes weak, the tongue and teeth brown or black; excessively copious or very slight stools with great pain or none at all in the bowels. The stools are of various colours: dark, green, or black; mucous watery, or serous. The pulse low, thread like, and intermitting, with the other symptoms of typhous fever, as picking of the bed cloths, cold extremities &c.

Dysentery is distinguished from diarrhœa by the tenesmus, bloody stools, and general fever which characterize it; from hæmorrhoids, by the blood being discharged first in hæmorrhoids

and faces last.

In the prognosis, it is the indicative of a dangerous case; when the disorder of the stomach is obstinate; when the countenance alters much; when the pulse sinks, and intermits, when the patient is restless without complaining of gripes. In the beginning a hiccup is little to be dreaded; but in the low and advanced state, if obstinate, it is commonly a sign of mortification.

Hippocrates says in his aphorisms. Si a dysenteria detento velect caruncula secesserint, lethale est. Also In longis dysenteriis appetitus prostratis, malum: et cum febre pejus. The disease when fatal ends in a prostration of strength, a sore throat or aphthæ; involentary, and cadaverous stools. The morbid appearances, in very severe and protracted dysenteries, exhibit, by dissection, the inner membrane of the great intestines thickened, and formed into small irregular tubercles of a white or yellowish colour, and occasionally large dark coloured patches with thickening of the

peritoneal and muscular coats. Abrasions or extensive ulcerations are not unfrequent. In tropical dysenteries, the colon has sometimes been found decidedly in a state of mortification, and faeces have even escaped through the mortified intestine. In dysentery the ileo cecal valve and commencement of the colon are the parts principally affected, the sigmoid flexure and rectum more slightly. The mesenteric glands corresponding to the inflamed parts are often found red and tumefied. With these, which are the true dysenteric appearances, there are not unfrequently united marks of peritoneal inflammation.

The causes of dysentery seem to be various; by some authors it is said to be produced by strictures in the intestines; by some it is said to be produced by contagion; by som it is said to be hepatitis in disguise; and by others it is said to be produced by a sudden check of perspiration, which appears to be the most common exciting cause. Excessive

fatigue and long exposure to the direct rays of the sun, appear in some cases to have brought it on. It is sometimes brought on by improper articles of diet; as putrid animal and vegetable food, unripe fruit, acid and accescent substances, ardent drinks, and ripe fruit, when taken in too large quantities will produce it, in debilitated habits, and in children. Cold water drank largely has produced it. Dysentery is often a form of Bilious Remittent fever, complicated with disordered liver, and is produced by the exhalations from vegitable and animal decomposition, the effects of which are brought into action, by the cold air of the evening, sudden vicissitudes of temperature &c.

In every case of dysentery (says Dr. Johnson) that has come within the range of my observation two functions were invariably disordered from the very onset, and soon drew other derangements in their train. These were the functions of the skin and liver, or perspiration, and bile or any secretion. Agreeably to Dr. Johnson, therefore

whoever can, by any means restore these two functions to their natural state, will cure the disorder. The intimate relation which constantly exist between the skin and mucous membrane is known by every one. When the circulation of the skin has been for some time active, and a greater quantity of blood than usual has been contained in it, a sudden impression of cold repels the circulating fluid from the surface, to the heart, great vessels and glandular organs; these not being able to accommodate themselves immediately to the quantity the fluids are rejected, and thrown upon a membranous tissue nearest like that of the skin, as the pulmonary mucous membrane, the mucous membrane of the stomach, the small & large intestines and when upon the latter dysentery is the result. The causes mentioned above may cooperate to effect this state of things.— The repelled excitement may be invited to the mucous surface of the large intestines, by any thing which irritates it.

frequently also indicates bleeding, if it be plethoric, young and robust, also if the patient have lived high, and if it be a cold season, bleeding will be required, as the disease may be expected to be inflammatory; If the symptoms run high it should be drawn freely, even to fainting. Some diaphoretic should now be taken by the patient with copious draught of some mild diluents as mucilage of gum arabic, barley water, flax seed or bran tea, or cream of tartar water in order to restore the cutaneous excitement. Warm fomentations to the abdomen will be of great use. If leeches can be obtained it will be more effectual to take blood from the surface of the belly, by them, than general bleeding. As often as the pains return, bleeding should be repeated, till the inflammation is completely subdued, then emetics and purgatives may be used, and not before; in the inflammatory form, the patient should be kept at rest, as long as the inflammatory

diathesis continues, All stimulating, astringent, and heating substances, as opiums, kino &c must be avoided. The employment of purgatives and diaphoretics constitue the most important part of the cure of dysentery. Purgatives must be steadily persisted in until fæcal evacuations have been introduced, and that sensation of load in the bowels, which leads to the effort of straining is completely removed. Almost every kind of purgative medicine has been used, and at different times recommended. Calomel with the addition of tartar emetic or ipecacuanha, is commonly found to answer best. Dr Johnson in his work on tropical climates, says if he can produce a gentle ptyalism in the disease there is no danger. If the object is, as he says, to produce a natural state of perspiration and biliary secretion; Calomel and opium combined with antimonials, seems to answer the purpose, as Opium modifies the action of the calomel, allays the irritation of the

bowels, and increases the diaphoretic disposition of the antimonial. When the stomach is very irritable, some other cathartic with opium should be chosen as, Extract: colocynth: com: gr. V. Hydrargyr: Submuriat: gr. V. opii gr 1, mix, and let it be made into two pills for a dose. The opium being added to allay irritation. Between the purgatives, however, proper diaphoretics should be interposed, and by that means the skin may be kept constantly soft. When the surface generally, is below the natural temperature, and, at the same time the skin dry, the immersion of the body in the warm bath will be found of eminent advantage.

Various diaphoretics have been used, and every one seems to have a favorite; but tart: antim: in small doses with a large quantity of water is the one most frequently used and is much celebrated by Senac, it may be given in the dose of a grain

dissolved in a pound of water taking a wine glass full every hour, or in doses sufficient to keep up a slight nausea of the stomach. Bad cases of dysentery, it is said, have been cured with this and no other medicine. The vitrium ceratum antimonii is much praised, particularly by Sir John Pringle, it being not so liable to irritate the stomach as do the ordinary preparations of that metal; the dose is 3 or 4 grains gradually increased to eight.

The action which is excited, by these means, on the surface of the body, should be carefully sustained, and the surface of the body should be very carefully protected from the sudden impression of cold air, while we at the same time avoid keeping it too hot.

After proper fæcal evacuations have been procured, it will be proper to continue the use of some mild purgative for a short time after as;

℞. Infus: ros: comp: ——— ℥x.

Magnes: Sulphat: ——— ℥ss:

Tinct: Opii ——— gtt. iv.

Syrup: rosarum. ——— ℥ss. M:

the draught to be taken every sixth hour. The neutral salts alone, have been said to be too irritating to be used in this disease, therefore they are most frequently combined with some other medicine as in the above prescription, If pain and diarrhœa should continue anodyne draughts will be found very useful as:

℞ Mistur: Amygdal: ——— ℥i.

Tinct: Opii ——— gtt; xx.

Syrupi ——— ℥i. M.

Fiat haustus.—

and mucilaginous anodyne injections as.

℞ Mucilag: amyli: ——— ℥ VIII.

Tinct: Opii ——— ℥i. M.

Fiat enema.

Injections are abundantly employed in dysentery but not of a cathartic nature. In the employment

A Dissertation
On the Physical effects of heat, and Cold,
on the Human System.

by William S. Chaplin

1830

The Physical effects of Heat and Cold — and their reciprocal changes on the human System —

The succession of diseases, with the course of the seasons, has commonly been noticed by practical writers, but we would observe, that these are rarely the simple, or, uncombined effects of the changes of temperature alone — but in conjunction with these, we have to regard the effects produced by various miasmata and effluvia — together with specific infections —

There is some difficulty in seperating these concomitant causes of disease, which arise from various sources — from those of a more simple origin —

It is necessary therefore that we examine the different causes of disease, in various situations and under different circumstances, in order to discriminate them with more accuracy —

In pursuing this subject, we will first attend to the simple effects of a warm atmosphere with its consequences, seperate from the impregnation, which it often undergoes from adventitious causes —

Singular as it may appear there is very little infor-

—mation to be had from the older writers in investigations of this kind — but it is equally true, that much has been done during the last centuries in ascertaining the principles, operations and laws of nature ——

— Hippocrates paid much attention to the vicissitudes of the seasons, but the physical knowledge of nature, was so little understood in his time, that although his diligence was great and his sagacious attention to whatever fell under his own observation, so accurate, as to appear wonderful — yet when we consider that there was scarce any thing written on the subject before him — very little to be found in the few Grecian philosophers who preceded him — we are not to expect from him, what the times could not afford. ——

Had a rational attention been paid to the effects of heat, we should not have had the medical faculty themselves, differing in opinion concerning it, down to the close of the 13. Century — one contending for its stimulant, another for its sedative property — This would appear singular, and inconsistent, did we not consider, that on all subjects of importance, there are men of various opinions, and talents, whose diligence and information, differ in proportion to their acquirements, each holding himself to be in the right, and his opponent in the wrong —

— Besides many men of abilities often have an apathy

to inquiry, believing assertions, rather than seeking for proof among the annals of literature, and following others rather than thinking for themselves —

The immediate effects of heat upon the human system appear to be stimulant; and of all the agents in nature we believe there is none more directly and certainly so — but like all other stimuli it destroys the vital principle by its excess — in moderate quantity it is necessary to life and health — its total privation is known to extinguish life in the warm blooded animals — to cause a torpor in the cold blooded —

The stimulant effects of heat are very similar to those produced by other stimulus — on its first application when moderate, it enlivens and exhilerates the animal spirits — sets the latent and vital energies into action — having an effect similar, though in an inferior degree to the different alcoholic preparations; — but if suddenly and strongly applied it exhausts the vital energy too soon, destroys its sensibility if too long continued — causing weakness, depression and prostration; — thus we see an inhabitant of a cold northern country, on his first removal to a warm climate lively and efficient — full of animation and flushed with buoyancy of feeling — but after a series of years residence in such a climate, he loses much of this disposition, particularly if his employment be sedentary; and his mind seldom retains that natural vigour and strength, with endurance of that intellectual labour, which in his native clime,

he is so capable of supporting:— The imagination being the strongest attribute of the mind, he becomes volatile, or sinks into hypochondriasis if he has made too free use of spirituous drinks,— for a long residence in very warm countries, with the additional stimuli of strong liquors, debilitates in an extraordinary manner the corporeal man and also depresses the mental faculties,— particularly if the mind has been in an anticipating-solicitous state — Persons in such conditions are subject to fevers and hepatic affections from slight causes - and we believe that diseases of the liver are the more frequent cause of hypocondriac, and other similar affections, after the energy of the system is destroyed by heat and excess of dissipation.— Being fully convinced of the stimulant effects of heat - so also are we of the sedative effects of cold to a certain extent — Heat increases the action of the vessels, and the other "moving vital parts" Cold assuages and allays this action - but it is only on the surface that either of them can act directly, though many of the internal parts are involved from sympathy - So we know that the temperature of the blood and other internal parts are ~~not perceptibly changed by~~ the external temperature - so that the effects of these two impressions are produced on the surface, and the sympathies to which they give origin; - but even these produce great changes on the system —

In consequence of the sedative effects of Cold on the surface of the body, the vital energy is accumulated - the strength increased - and an agreeable glow of feeling,

experienced - this is when the first impression has not been too strong to prevent reaction - nor acted on a weak and irritable habit in too decided a manner, having thereby the effect of a permanent sedative —

The inhabitant of a warm climate, on removing to a cold country, is commonly attacked with Catarrhal affections, obstruction of the viscera, etc; deprived of the external stimulus to which he has been accustomed - and if in the advance of age and having been long a resident in a warm climate, he is more strongly affected in this manner - than any person can be on the accession of winter, after the warmest summer —

Heat as we have before observed, when applied in a moderate degree is necessary to life and health, but an excess destroys and wears out - by keeping up too great an irritation on the surface, and other sympathising parts: an excess of Cold acts diametrically opposite - on its application to any part of the body, if it be not deprived of its vitality, on coming into a warmer atmosphere, a temporary inflamation succeeds, from the vital energy being accumulated during the action of Cold: - but by heat this vital energy is exhausted, and the body weakened — The alternate changes of heat and cold, if we consult our own feelings are rather agreeable than otherwise; - for there is an innate fondness for variety implanted in the human mind: - and when they do not go to excess, they cause a pleasing variety, which we have every reason to conclude contributes to the preservation of health - for as Sydenham observes -

the changes preserve a balance. Pursuing this consideration, we may also suggest, that an over great uniformity in any of the articles of regimen are to be avoided, by those who wish to pursue the strictest prophylactic course, and enjoy the most uninterrupted health. "for neither food, nor drink, air nor exercise should be too uniform, for they thus engender too great a susceptibility of body - predispose it to be acted on by every variation of atmosphere or regimen - weakens the mind as well as the body, and deprives us of true health" -

But continual heat sets other causes in action. by hastening the putrefaction and decomposition of vegetable and other matters, - it also predisposes the body to be more susceptible of morbid impressions. - It is a remarkable difference which exists, between an atmosphere with moisture simply diffuse through it, as in high and healthy countries - and that which exhales from stagnant water, swamps and marshes - the former is seldom hurtful, the latter often pernicious - we shall endeavour to attend to this latter, in our remaining remarks - drawn from observations, made in regard to this subject -

"The heat of the atmosphere being confined very near the common level of the surface of the Ocean in all climates" appears to ~~be the cause of the heats being~~ so great in low Countries - particularly in warm climates, and consequently of the noxious exhalations of which heat

- is always an active agent - the temperature of any part appears to be affected by various circumstances - but we would presume that it is commonly in proportion to the number of rays of the sun, which fall in a given space of time, as may be proved by a lens or mirror — therefore, where they approach nearest a perpendicular they are the strongest - and when the air is clear they act on the earth with the greater force —

"But though the light comes from the sun, the heat does not, the rays of light extricating it from the earth.. This theory is ingeniously supported by Mr Millar of Perth. the author of a modern work entitled "Physical and Stat- e physical Inquiries" he imagines that caloric is not trans mitted from the sun, but that it is a subtile fluid or- iginally belonging to our earth — the arguments he uses in support of this opinion are clear and convincing - we will barely make an extract from a work before us, containing this theory - having neither time nor disposition to follow he subject through." This view of the nature of Caloric" says the author above alluded to - "is more corresponden- with the general character of matter, than those gene ally entertained - It still regards the sun as the great agent in the production of heat, without supposing it an enormous mass of fire — We have only to consider the sun as the great storehouse of light, a power indeed the most active in nature - but no way destructive - It shows

that light produces heat merely by exciting an insensible action between caloric and the particles of matter contained in bodies — It accounts for the want of heat in the upper regions of the atmosphere, by the want of sufficient matter to produce the action of Caloric — It shows that caloric is not an exception to all other kinds of matter, but that like its fellows, it exists in other characters besides that of sensible heat — these being some of the prominent propositions of the theory — we have thought fit thus to allude to them, as having a collateral bearing on the subject before us, — without entering further into its merits or demerits —

We proceed now more directly with the effects of this matter however produced. — Great heats when accompanied by moisture volatalize many substances, which more temperate weather will not affect, but vegetable decomposition or the exposure of a moist surface in the time of frost, does not change the properties of the air — for frosty weather is equally healthy in all parts of the world — the air being of all known substances the most necessary to life, and its variations so generally affecting our health — it deserves our most serious attention as physicians —

The atmosphere contains in general about three fourths of its quantity of air, which is neither a supporter of life nor Combustion — this has been named the mephitic azotic, or Nitrogen — the other is the pure vital air — the fabulum vitæ — the oxygene, — but the absence of this pure

principle does not render it so hurtful to life as the presence of fixed or inflamable airs, which are commonly extricated by the decomposition of water or vegetable substances - It is this pure part of the air which imparts the beautiful scarlet colour to the blood - the circulating fluid is of a modena purple colour when it arrives at the lungs - but having there thrown off hydrogen and Carbon - it imbibes the oxygene and nitrogen of the atmosphere which changes its dark colour to a brilliant red, rendering it the excitor to the heart and arteries - the source of animal heat - the cause of sensibility, irritability and motion -

"The internal surface of the lungs or air vessels in man is said to be equal to the external surface of the whole body" - it is on this extended surface that the blood is exposed through the medium of a thin pellicle, to the influence of the inspired air - "By the elevation of the chest and the descent of the diaphragm room is afforded for 42 Cubic inches of atmospheric air at every natural and easy inspiration" - or according to the experiments of others the quantity of fresh air necessary to support life and health is about one gallon a minute, or near the same quantity which a common candle consumes -

By the experiments of Dr Crawford it appears that when the body is immersed in warm water or warm air, the venous blood returns but little darker coloured than the arterial - this would appear to influence

somewhat the idea "that heat alone is not the cause of the dark colour when the rays of the sun are excluded from the body - but it appears to act through the intermedium of other substances" —

The inflamable air contained in the venous blood being the substance which principally attracts the vital air, when this is deficient less of the vital air mixes with the blood in the lungs, and consequently less heat is extricated — this appears to be the only explanation we can give, why the interior of the body is no warmer in hot than in cold climates & seasons —

We must say a word as regards the supply of pure air, to its consumption by the respiration of animals and combustion of vegetable matter - the vegetation of vegetable substances afford it in great abundance - the action of the sun on them causes the absorption of inflammable air as a part of their nutriment - this appears to be the design of the Creator in their formation - The evaporation of water also affords pure air - the moisture it infuses is in fact a necessary part of the composition of common air, for when deprived of it - as in the Arabian winds - it becomes destructive — we find by experience however, that whenever warm or cold air is overloaded with moisture it is disagreeable to our feelings, and injurious to health — here experience goes counter to what we might expect a priori — from chemical analysis -

but this is not the only instance in which chemistry fails of demonstrating the effects which physical substances produce on animal life, there is no state of the air more disagreeable to our feelings than the one much impregnated with moisture, either in a warm or cold atmosphere - we are weakened and disfitted in the most evident manner when the air is warm - the cutaneous surface becomes relaxed and both mind and body assume a state of langour by its continuance - from these reflections we are led to believe, that moist air does not perform its office so salutary in the lungs, as air moderately impregnated - whether this happens from its not imparting the pure principle sufficiently - together with heat; from its not extricating the fixed or inflammable air from the blood - we are not prepared to say. - Cold and moisture appear to obstruct perspiration by rendering the surface quiescent as it were, and lessening the action of the capillary vessels of the skin - hence we have Catarrhal affections; - and in warm moist air, in consequence of the relaxation it produces, the system is liable to suffer from the least change, under choleras, dysenteries, or bilious remittents — But a pure dry air induces strength and vigor, as we experience in frosty weather, - we thus feel more elasticity and buoyance, and are more capable of resisting future impressions, - pneumonic affections are sometimes a consequent of its long continuance —

In consulting practical authors a regard should be paid to the difference of climate under which they write — for this reason a correct knowledge of geography and topography is essentially necessary to an intelligent physician — The most prevailing winds, the nature of the soil over which they pass, their moisture or dryness, heat or Cold, forms a most important consideration in medical science —

Hippocrates appears to have paid much attention to these subjects in his observations upon the air, waters, and locations of particular districts — but after his time it appears to have been much neglected —

The writers who have attended to subjects of this kind do not sufficiently mark the effect of miasmata, from those of heat and cold — so as to exhibit their effects seperately with their causes, and means of prevention — By pursuing investigations of this kind we trace out the external source of disease; but as for their internal causes we must have recourse to the state of the human system itself.

Local situations whether elevated or low, marshy, or dry — covered with vegetables or bare — all have their particular influence —

The air of Cities and large towns is known to be both unhealthy and disagreeable in the warm season even in middle latitudes — they are consequently exposed to diseases from which the country is exempt — but they are freeed from them again — Heat and moisture are the great analag-

omists" to health in the country - As fermentation will
not take place unless the exposed fluid be in a state of
st, and acted on by a certain degree of heat - so also the
utrifactive decomposition will not take place in mar-
hy grounds, unless the moisture be in a state of stagna-
on - But pure water in a state of stagnation will
t undergo any change in consequence of heat and rest, un-
ss it is impregnated with vegetable matter, consequ-
ntly will not vitiate the atmosphere -

The effects produced by breathing an impure atmos-
here, is sensibly perceived by persons of much nervous
ensibility - Close, ill, ventilated apartments have the
ffect to produce in those susceptible habits, lowness and
epression of spirits, with an uneasy erythematic state -
nd obtuse head aches, for the relief of which nothing
ore is necessary than a free circulation of air - persons
ave also perceived a slight rigor or chill, accompanied
ith head ache, from walking about marshy situations -
and yet it is highly probable that no chemical or
ther physical means could detect any impurities in
his air - though the olfactory nerves sometimes can -
or it is apparent that there may be noxious substan
s afloat in the atmosphere, or conveyed by contact,
hich we have no sense appropriated to detect, although
he smell is certainly the one most to be depended
n, for we often perceive infectious diseases by their
smell - particularly if we are well acquainted with them -

for example, the peculiar atmosphere which pervades a syphilitic ward may always enable the scientific practitioner to detect this disease, wherever met with, either in the public Almshouse, or the more secluded walks of private life. But we must remember that the properties of animal life, are not to be explained either chemically or mechanically, though often attempted —

The inhabitants of dry, hilly and mountainous countries, are generally endowed with greater mental capacities, as well as activity and strength of body, than those of low, flat, countries, for as the native character is imprinted in early youth, so there is no doubt that the mind, as well as the body, receives lasting impressions from surrounding objects —

The influence of local situations on the physical nature of Mankind, is too obvious to escape any observer who will use his judgment and reflection; so that we cannot but wonder, that even the Speculator should deny it: — but observation and reason must and will ultimately prevail in this as well as similar contests, only by turning mens attention to them,

In taking our leave of the subject, we would state that on a synoptical view of the catalogue of diseases, there are few which do not appear dependant for their origin either

directly or indirectly on the "matter" of heat or Cold —

We respectfully submit these desultory remarks; under a full conviction that the Gentlemen before whose perusal they have to pass, will, as the teachers of Youth, make every due and candid allowance —

With these considerations they are cheerfully resigned to their inspection —

An

Inaugural Dissertation

On

Hysteria

Submitted to the Examination

of

Roger B. Taney Esq. Provost

of the Trustees, and Medical Faculty

of the

University of Maryland

for the

Degree of Doctor of Medicine

By

Robert A Nelson

of Virginia

To

Doctor Nathaniel Potter. Professor of the
Theory and Practice of Medicine in the University of
Maryland. This small testimony of regard for his pro-
found erudition, extensive acquirements and general worth;
is Respectfully inscribed by.

The Author

The term which has been employed to designate this affection was not only instituted at an early period of medical science, but was doubtless restricted in its application to denote some derangement or mis-affection of the Uterus and its appendages: Though we are far from denying that in very many instances, Hysteria is intimately blended with a morbid condition of the Uterine functions, yet it would be conceiving & hazarding too much to say that it never exists independently of such a state: Indeed the many and well authenticated instances of its having occurred in men of enervated fibre, debilitated constitution, and highly nervous temperament, may be adduced in confirmation of the truth of this assertion. But there are those who contend that this disease when met with in men should be denominated Hypochondriasis, nothing however is more absurd or more completely fraught with error, than the maintenance of such an opinion, That they have symptoms in common is not denied but that these are those which peculiarly characterize Dyspepsia is alike undeniable. They are separate and operating strictly distinct affections, and capable of being distinguished by symptoms not only inseparable from each other, but which at the same time

of purgative injections, it is said, there is no advantage, but rather mischief, as they irritate the diseased portion of the canal, without reaching that part in which the faeces are observed to linger. Therefore they are not much resorted to. When dysentery is united with diseased liver, which may be known by a bilious aspect of the countenance, tenderness and tumefaction in the region of the liver, dark bilious evacuations &c. salivation will be found most valuable; it has also been recommend, as an effectual method of putting a check to the advances of the disease in hot climates; in the inflammatory and remittent varieties, the depleting and purging plan with diaphoretics and diluents, and fomentations and blisters, to the abdomen will generally be found sufficient. In the treatment of the typhous form ventilation, and cleanliness should be observed, and every thing that debilitates

should be avoided; the bowels are to be kept open, by gentle purgatives, followed by tonics; after every operation sudorifics will be useful. The evacuations should be sufficiently free to discharge any unnatural collection of matter from the bowels, at the same time guarding against much purging.

The system should be supported by soups, panada, &c. The volatile alkali, and wine whey, camphor in small doses, are valuable stimulants, astringents are indispensable when the stools are copious. In the last stages blisters applied to the legs are often useful. The convalescence should be managed by gentle purgatives, combined with tonics.

In dysentery the diet should be light and digestible, as rice water, barley water, the yolks of eggs, arrow root, tapioca, sago &c. with a little aromatic powder as ginger or nutmeg to render it more

palatable.

Flesh of all kinds, broths, oily substances as fat and butter, the white of eggs, and spirituous liquors or malt, should be avoided Exposure to cold damp air, and indigestible food, produce relapses. In the treatment of the disease cold water should be taken with caution, as it generally suppresses perspiration which it is our object to preserve with the utmost care. as its suppression is attended with almost instant aggravation of the unpleasant symptoms. However, it seems sometimes to be beneficial. If we find on trial, that while it is grateful it is also beneficial, we may allow it to be taken in small quantities.

During convalescence, the patient should wear flannel next the skin; in order to carefully protect the surface of the body from all vicissitudes of temperature; and take gentle exercise.

Conscious of the imperfect manner, in which, I have treated this subject, I must conclude rather than do it farther injustice, But before I take a final adieu of you, illustrious professors, permit me, in this humble manner, to return you my most sincere thanks, for the inestimable principles, which I have received from each and all of you in the science of medicine: And that each of you, gentlemen, may long enjoy that honor and happiness, which you so deservedly merit, from your indefatigable exertions, in the promotion of useful knowledge, is my most fervent wish.

Finis

An Inaugural

Dissertation

On Pneumonia Vera.

by Hammond Stewart

of Maryland

1878

A Treatise On Pneumonia Vera.

It is with peculiar diffidence that I attempt to write on a subject which has been treated of so often and by men so far superior to myself both in mental acquirements and in experience of the diseases to which we all are subject that I feel confident, that it will not be expected that I can advance any thing new upon this disease. I shall therefore merely enumerate the symptoms, secondly its causes and thirdly and lastly the cure of Pleurisy.

Pneumonia Vera.

This term is applied to every acute inflamation which affects either the viscera of the thorax or the pleura which lines that cavity, though the principal seat of the disease are pleura, the mucous membrane of the bronchia, and also that part which lines the air cells of the lungs &c.

Pleurisy may always be known to be present by the presence of a fever, a pain in the side, difficult breathing, and a cough though this last symptom enumerated is not

4th.

but is various, for sometimes it is felt under the sternum and in the back between the shoulders, though the most frequent place for it to be felt is either the middle or a little more forwards of the sixth or seventh rib sometimes it does not remain stationary but shoots from the side to the scapula, or to the sternum or clavicle, the cough which is hard and short very much increases the pain so that it is stifled as much as possible by the patient at first it is dry or without any expectoration and the whole is ac-

=ompanied with a fever which is urgent; and there is a frequent, strong and hard pulse, the tongue is foul or loaded with a thick fur, the skin is hot, and the patient very restless and complains of great thirst; the urine is scanty and of a high colour.

This disease sometimes makes its attack in a very insidious way and at other times and indeed most always comes on suddenly.

A slight degree of inflammation may sometimes exist in the lungs

for a considerable time without producing any serious consequences, and at other times the same degree of inflamation cannot exist but for a very short time without occasioning fatal effects.

This disease terminates most frequently by resolution, sometimes by expectoration which is frequently tinged with blood; it may also terminate by suppuration and gangrene. and by an effusion of serious fluids into the air cells of the Lungs, this takes place more frequently when the inflam

found on a post mortem examination floating loose in the cavity of the thorax forming what is called empyema.

Sometimes in this disease as well as in peripneumony there are to be found one or more abscesses formed which are called vomicae.

The internal surfaces of the pleura frequently adhere to each other; and in this state the

breathing is not very materially

affected by it.

Pneumonia differs from all other inflammatory affections by its occurring with equal frequency at every period of life and variety of habit. Its exciting cause is cold and sudden transitions of the weather from heat to cold.

It frequently succeeds to other diseases, such as the Measles, Small Pox, Catarrh &c.

A disposition is given to this dis=
=ease by long continued speaking,
by severe exercise of the body and
by its having affected the person
before. It is also frequently produced
by frequent intoxication, and by
drinking cold water when a pers=
on is very much heated and
particularly when he is perspi
=ring freely.

It occurs most always in the
in the winter and spring seasons

of the year.

The treatment of this disease consists in
leeding in the early stage of the disease, and
to be as often repeated as the urgency of the
mptoms require. and the orifice should be
ade large, so as to admit a large quantity
blood to flow in a short time; the blood should
e allowed to run untill some impression is made
on the system. Tartar Emetic has been
ery successfully employed in the doses of
rom six to fifteen grains dissolved in six
nces of water to be drank in the course

of the xay. gentle laxatives are to be given at the same time, purging with the neutral salts is to be employed, and refrigerants such as nitre are to be used. diaphoretics particularly the asclepias tuberosa and the asclepias decumbens are highly recommended in the form of infusion in the dose of a tea cupfull every two hours the best expectorants are Ipicacuanha and antimony. Opium is never to be used during the high inflamatory stage of the disease and it should be used with the utmost

caution when it is more advanced as it will otherwise check the expectoration. the steams of warm water and vinegar is highly advantages when inhaled so as to promote expectoration.

Blisters are of great service but are inadmisible as long as the pulse continues hard, and the inflammation has been subdued by venesection. when the blister begins to draw half a pint of barley water with a scruple of nitre dispolved in should be drank by the patient everyhour

till the blister has completely drawn. It
should be kept running as long as any pain
is experienced. If the disease has terminated
by suppuration advantage will be derived by small
and frequent bleedings and the tincture of digitalis
is particularly if the difficulty of breathing
be very distressing. The diet must be light and
easy of digestion. The patients strength must
be supported by light and nutritious food
Paracentesis Thoracis is to be performed if
occasion require it.

Hoptera.

Nelson, Robert A.

No author. No date. 1832

Incomplete.

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designate the spasce or real nature of the disease, the convulsive struggling paroxysm, the variable and inconstant temper, the sensation of a ball which threatens suffocation, the copious discharge of limpid urine, characteristically belong belong to Hysteria, and are never seen in Hypochondriasis when it is strictly idiopathic, while on the other hand, the sad and dejected countenance, the spirit of despondency which infuses itself into the actions, the melancholy gloom which ever and anon awaits the ill fated sufferer pathognomonically belong to Hypochondriasis are not necessarily connected with Hysteria and indeed are rarely if ever seen in it.

A disease assuming as this not unfrequently does every variety of form, exhibiting a collection of symptoms various and conflicting, assimilating itself to diseases at once unlike in complexion, and diversified in character, has not only proved an abundant theme for nosological disputation, but affords ample grounds for predicating the belief that there exists no inconsiderable disarray of the animal, as well as the vital functions.—Though deemed of little importance by Medical writers, it is nevertheless the most difficult in its treatment of all the nervous affections, rendered so perhaps by its frequent connection and intimate association with other affections

The different temperaments have been too little regarded and indeed (as we conceive) misnamed by authors, we trust it is with becoming deference, that we endeavour to combat a theory which has so long obtained and been considered orthodox among us. That, which has been familiarly recognised as Sanguine should, if we regarded the facts exhibited by Anatomical research have received the appellation of Nervous, and that denominated the melancholic, the appellation of Sanguine, the nerves being proportionally larger than the blood vessels in the former, & vice versa in the latter.

In accordance with all clonic affections Hysteria developes itself in persons of mobile, irritable, and highly nervous temperament, and those thus predisposed are liable to its invasion at the age of puberty more especially if by the intervention of any untoward circumstance, the menstrual evacuation, be prolonged or obstructed.— Phenomena of the Paroxysm. It sometimes takes place suddenly, unaccompanied by previous warning, or any ostensible excitement, (more especially does this happen) should the patient have been the subject of repeated attacks; frequently however it is ushered in by some premonitory signs, such great depression of spirits, anxiety of mind, palpitation of the heart, a sense of nausea, flatulency, difficulty of breathing, sudden effusion of tears;

But it more frequently happens that a pain is felt about the flexure of the colon, gradually passing with a sense of distension upwards towards the stomach, thence to the upper part of the pharynx, occasioning by its pressure great annoyance, this has been called "Globus hystericus" the fit ensues with coldness and shivering sometimes with stupor and insensibility. the body is writhed backwards and forwards with violent agitation, gnashing of teeth inability to swallow, a frothy saliva is discharged, the muscles of the trachea are violently, and variously affected, giving rise to laughing which alternates with crying incoherent expressions and temporary delirium :— the limbs are violently agitated fists firmly clenched so much so indeed that no force which you can employ is sufficient to open them, the sphincter vaginae and sphincter ani muscles are liable to the invasion of spasms of so spastic a character indeed to forbid the introduction of a clyster pipe— The violence and continuance of the convulsive struggle seems to depend on the degree of mobility present in the constitution, in some it is feeble the person lying scarcely in profound sleep without sensation or motion, whilst in others it is exceedingly violent, exhibiting contractions as rigid as those of Tetanus. A hiccough of the most obstinate and distressing character not unfrequently attends this disease, it being the most

prominent, may almost the only symptom, its duration is uncertain, frequently subsiding after a short period, again continuing for several days threatening; by the exhaustion it engenders the life of the patient. An equal degree of uncertainty characterises the continuance of the paroxysm, terminating occasionally in an hour, sometimes however it is protracted to twenty four or even forty eight hours:— When at length the paroxysm has subsided the patient is seemingly, almost exhausted, lies in a stupified and apparently lifeless condition— during this comatose state there is often a temporary tympanitis or elastic distension of the stomach and bowels which leaves them in a very sensitive condition. The exercise of sense and motion gradually returning without any consciousness of what has transpired save only a vague and indistinct recollection of some of the accompanying circumstances.

Prognosis: However formidable and alarming the symptoms of an hysteric fit may seem, the immediate danger arising, is often very inconsiderable; but should it develope itself in those in whom there exists a strongly marked hysterical habit or temperament, and its occurrence become frequent, then or under these circumstances, we could not but feel some degree of solicitude or anxiety lest it should assume the Epileptic character and indeed completely merge itself into Epilepsy and thereby become incurable.— Diagnosis. Hysteria is capable of counterfeiting with most astonishing accuracy with limited or perhaps little exception

almost all of the diseases which are incident to the human family. The mention of a few however is deemed sufficient to show the correctness or prove the validity of the position. Counterfeits canine madness with its accompanying symptom Hydrophobia. Sometimes there will be violent pain in the throat unaccompanied by inflammation or even redness which is nothing more than Neuralgia, occasionally there will be an hysteric cough counterfeiting Phthisis. Sometimes it concentrates its force upon a tooth in which case it is not removed by the extraction of the tooth; but not unfrequently develops itself in the form of nervous headache or boils, a hot spot and a cold one. The muscles are subject to its invasion with acute pain, assimilating itself to, or counterfeiting Rheumatism but there will be no excitement of the vascular System. Asphyxia sometimes takes place which has vulgarly been called a "trance". There is almost every variety of pulse, in many cases it is natural, often however it is weak, frequent, quick or slow, which last circumstance does not generally denote an affection of the brain, but when slow, unaccompanied here the brain is implicated. The lungs are frequently with much difficulty expanded, the abdominal muscles drawn towards the spine as in Chlc or last stage of Cholera. Having mentioned only the more prominent distinguishing characters of Hypochondriasis and Hysteria it may be necessary to contrast them

further or speak of them a little more in detail - Hysteria manifests itself for the most part in the sanguine and irritable, making its invasion about the age of puberty, its attack often sudden and sometimes violent, accompanied with globus hystericus and frequently much spasmodic affection; Hypochondriasis on the contrary attacks the sluggish and melancholic, makes its appearance about the thirty fifth year, a period at which hysteria is either manifestly declining or has totally subsided - its advances are slow and almost imperceptible - tedious in its duration and difficult to eradicate; Hysteria is for the most part a corporeal, Hypochondriasis a mental disease the former an affection of the irritative, the latter of the sentient fibre. From syncope it may be distinguished by a careful analysis of its symptoms there is for the most part a total cessation of pulse, distorted or contracted face ghastly countenance without any respiratory motion of the chest whatever; whereas in Hysteria the face is more dilated or expanded and a pulse though weak and languid and this condition may and not unfrequently does countenance for a day or two which never happens in syncope. There is an essential difference existing between Hysteria and Apoplexy in addition to the depriviation of sense and motion the breathing is uniformly laborious and oppressive, accompanied by stertor, which does not

-ccur in Hysteria. That very peculiar and most remarkable pre-
monitory symptom which characterises Epilepsy, and which has re-
ceived the appellation of Aura may be regarded as one of the most
striking criteria between these affections. In Epilepsy too the mus-
cular power is generally less extensively affected, while the intellect
-al, is much more so, in consequence of the very great distension of
the vessels of the Brain producing Coma: In Hysteria the nerves are
primarily affected, the brain secondarily, whereas in Epilepsy the brain
is the seat of the disease the nervous system becomes implicated con-
secutively. ... Causes. Though Hysteria is in many instances a truly
nervous affection even in its incipient stages, yet a disease the phenom-
ena of which exhibit such a concatenation of symptoms, a train at
once so varied and complicated that our attention should with equal
propriety be directed to the stomach - alimentary canal, as also to the
uterine functions. This affection is rarely seen except in those whose
temperament is peculiarly irritable and whose constitution exhibits
great mobility of the nervous system, the various et semper mutabile
Those thus constituted are liable to have it called into action by
the slightest and most transient causes; as grief, excitement, anx-
-ty, passion and indeed any unusual impression as fright. Acrimo-
-ies of the stomach and bowels, plethora, mental emotion, and more

especially a turgescence of the Uterine functions operate as the occasional cause of the convulsions which arise in this disease and which manifest more or less of the spastic character, in proportion as the powers of the Constitution are more or less vigorous. Great debility from any cause as suckling fatigue, bad air &c. inducing a languid circulation, the arteries performing their functions feebly, and thereby producing congestion in the venous system, will give rise to this disease. As the exciting causes among men may be enumerated, retention of the urine the presence of tough phlegm in the primæ viæ, worms, scirrhous affections of the lower viscera &c. Indeed any thing which makes an infraction upon the uniform current (so to speak) of the nervous fluid, will prove a powerful provocative. It attacks more particularly the unmarried and barren, and is for the most incident to all irregularities of the menstrual discharge.

Treatment. The indications are first to lessen the violence of the paroxysm, and secondly to obviate or prevent the return, by the exhibition of proper remedies during the intervals. In those cases in which the attack is severe and of long duration occurring in a patient young and plethoric with full pulse a liberal abstraction of blood may be made especially should

there exist a suppression of menstrual evacuation; pungent applications may be made to the nostrils, while at the same time the temples should be bathed with ether, face and neck may be sprinkled with cold water; and warmth together with friction be applied to the extremities. The peristaltic action of the bowels should be encouraged by the administration of stimulating and cathartic injections. Should there be no reason to apprehend that the disease has arisen from a disordered state of the stomach from crude or indigestible substances, the exhibition of an emetic will be of essential service frequently in cutting short the paroxysm. Of the utility of emetics in a variety of spasmodic diseases, we have the concurring testimony of many of the most eminent practitioners, ancient as well as modern. Comparatively few however are recommended their employment, in this affection, in a certain form of which they are eminently useful. A total suspension of the animal functions characterises the form here alluded to; the limbs lie apparently in profound sleep, respiration is performed slowly and without any ostensible effort. countenance pale, eyes sunk, pupils contracted; these symptoms are doubtless referrible to a balance, in the circulatory system, causing congestion of the thoracic & abdominal viscera which is speedily removed by the exhibition of an emetic.

In the milder forms of the convulsive fits, Asafoetida, Galbanum, Castor, musk, camphor, valerian &c. will be found serviceable. In those however of a more violent and spastic character, we should employ stimulents the most powerful and efficient, as Opium, brandy, ether, ammonia &c. put them into a warm bath and bleed if the pulse be hard. It sometimes happens that Hysteria even in its incipient stage is characterised by a high degree of action, arterial as well as muscular, and the nervous system is so wrought up, that nothing but blood-letting will avail, by the neglect of which, the life of the patient would be greatly endangered in the convulsion which would ensue. The fact too that it not unfrequently degenerates into Epilepsy and even Apoplexy furnishes an additional argument for the abstraction of blood. Sometimes there is violent pain in the back extending to the sternum, occasioning by its severity, pale, ghastly countenance, and a pulse scarcely to be felt, under these circumstances we should employ opium and other stimulants; but this affection of the back when accompanied by fever, with hard pulse the womb is implicated, and we should have recourse to the lancet and other antiphlogistic means. - Symptoms of Dyspepsia often accompany and sometimes produce this disease such as cardialgia, acidity with a burning sensation in the stomach which may be removed by an Emetic or Alkaline Medicine.

It is to the interval however that our attention should be directed: all prophylactic measures are we conceive of the greatest importance: indeed the advantages arising from a strict observance of the means of prevention are incalculable, and he who fails to avail himself of these resources is not only guilty of direct and palpable negligence, but is at the same time withholding that which promises to afford one of the best sources of confidence for the eradication of this disease. Our attention should primarily be directed to the state of the patient's mind, sedulously endeavouring to preserve that equanimity upon which depends in a very essential degree the permanency of the cure. We should avoid exciting curiosity, awakening a passion, or calling into exercise any solicitude, anxiety or desire, which cannot be gratified, and thus guard against all predisposing and exciting causes. In a full plethoric habit we should obviate the excitability of the system by the lancet, spare diet, exercise, and the occasional exhibition of purgatives. A generous diet has been recommended, to this however we cannot but object as nothing better calculated to engender venous plethora, which so far from preventing would doubtless give rise to this affection, a spare diet conjoined with the performance of more labour than they have been accustomed to will accomplish much in the prevention of this disease. In languid and relaxed constitutions,

Tonics are obviously indicated; such as the preparations of Iron Steel, bark and many of the warmer sedatives and antispasmodics, Asafoetida Camphor &c. with regular hours, exercise on horse-back: if there be present a morbid condition of the menstrual function, it should receive immediate attention - The practice of lying, as also of retiring early should be rigidly enforced: The custom of sticking on feather beds cannot be too highly deprecated; and consequently its indulgence, should by all means be prohibited, in winter as well as summer: Exercise before breakfast, except in bad wet weather is of great importance. Watering places not unfrequently exert a very beneficial effect, because of the novelty and pleasure they afford - The cold bath in summer and the warm in winter is a valuable prophylactic. Costiveness should carefully be guarded against as it will sometimes give rise to this disease, and can only be removed by the employment of drastic purgatives - Where they are subject to cramp or spasm of the legs, they should immediately jump out of bed: this will frequently remove it; should it not however ligatures may be employed though disagreeable they are of considerable advantage - immersing the feet in warm water and the employment of friction previously to going to bed will effectually

remove it. When however the cramp or spasm manifests itself in the stomach, we should have recourse to stimulants the most powerful & efficient, as Opium ether, ammonia &c. Should there be present any old or chronic affection of the Spleen, Liver or stomach it should be removed by exciting a slight Mercurial Ptyalism. Where it occurs in early life, and the accompanying circumstances justify the belief that there exists too inordinate a degree of morbid salacity, we should, unhesitatingly recommend a speedy marriage as best calculated to afford the surest remedy.

HUDSON
BATH

An Inaugural Dissertation

on

Cholera.

respectfully submitted
to the examination of the Revers.t Chase
ers and Medical Professors.

of

the University of Maryland

by

George M. Brown

of

Middleburg

Virginia.

Preface

If it were not known, I should think it proper to acknowledge, that in writing a dissertation on the subject I have selected, I can have no claim whatever to originality in the greater, by far greater part of it: Indeed the title of original, can only be granted to a few remarks I have made in different places; made, in the true sense of the word, as in all instances, they are made, from theoretical views, but these I have endeavoured to establish upon the firm principles of Medicine. Though in one instance they have led me contrary to what, has been said to be the result of experience. To Dr Potter's lectures, Dr Clarke's late work on the practice of medicine, and Dr Johnson's treatise on diseases of the digestive organs, I am principally indebted for assistance in writing this dissertation. I have selected from all, indiscriminately, often without mentioning the author.

The seeming presumption there may be in the attempted criticism on a part of the practice of Dr Clarke, it is expected with considerable confidence, will be removed or extenuated, from the consideration of the necessity and demand for some animadversion, which necessity and demand, it is hoped, are supplied in some degree, by the remarks that have been made.

Cholera.

The Cholera of adults commonly called Cholera Morbus, though universally acknowledged as one of the most dangerous diseases to which the human body is subject, if left to itself, is the easiest cured if properly treated. It has been but a few years since the pathology of this disease was understood, and as a false theory will always lead to insufficient or injurious practice. Cholera was as badly treated as its pathology was misunderstood. The disease had been considered as dependent on a redundant secretion of bile, till Dr Johnson exposed this pathological error, and pointed out the true cause of the disease, which immediately caused a change in the practice, the success of which proves that the pathology of the disease is now well understood. Dr Johnson remarks that authors from the days of Hippocrates down to those of Saunders, were led to the conclusion that Cholera depended on a redundant secretion of bile, by keeping an eye rather on effects, than on causes. They totally passed over the several links in the morbid chain, preceding the discharge of bile, and thereby confounded a salutary effect with a proximate cause.

Dr Eberle describes this disease more fully and satisfactory than any other author. Cholera Morbus most frequently makes its attack very suddenly, the first symptoms are pain, and a sense of tension in the epigastrium, which are soon followed by violent colic pains about the umbilical region accompanied with exceedingly distressing nausea. In a few moments vomiting and purging com-

-mence with great violence. Sometimes the vomiting continues an hour or so before purging takes place, but often both the vomiting and purging commence at the same time and continue with but little intermission until the system is exhausted, if speedy relief be not obtained. During the intervals between the attacks of vomiting the patient is usually harassed with continual nausea, and an indescribable feeling of distress in the epigastrium. The alvine discharges and the fluid ejected from the stomach are at first without any admixture of bile, the stools at first are thin and watery, as in common diarrhoea. After the disease has continued an hour or so, however, the bile begins to make its appearance mostly copiously in the evacuations, and towards the conclusion of the disease, the fluid discharged consists in many instances, almost entirely of bilious matter. Severe tormina and cramps in the abdominal parietes, and extremities, attack with the vomiting and purging, and become more and more severe and continual, as the disease advances, and the purging and retching become almost incessant. One of the most distressing affections belonging to this disease is the extremely painful cramps, which in severe cases, occur in the abdominal muscles, & in those of the inferior extremities. In cases of less violence the cramps are confined to the muscles of the leg, but in very severe attacks, the muscles of the trunk, with the upper and lower extremities are alike affected in this way. There is usually great thirst, but every thing received into the stomach is almost immediately thrown up again.

Sometimes there is severe headache, in consequence of the sympathy of the head with the stomach. The patient complains of great heat in the stomach and of a burning sensation in the rectum, produced by the acrimonious bile. As soon as the disease is completely developed, the pulse is small, feeble, irregular and intermittent. — the hands and feet become cold. — the countenance pale, shrunk and expressive of great distress. A great degree of languor, debility, and faintness, amounting sometimes to syncope speedily comes on, sometimes attended with obliquation of the eyes, and other symptoms, which often destroy the patient in twenty four hours. — frequently patients die in the course of two or three hours, and sometimes in a shorter period. In the Cholera of India, which is the most extremely fatal variety, the patient is suddenly seized with great prostration. — a scarcely perceptible pulse, — cramps in every part of the body, and all the symptoms of the milder forms of cholera, highly aggravated. If the first stage of the disease is survived, which is not common, the liver begins to pour out a large quantity of bile, thick and highly vitiated, which may be regarded as a favourable indication in the disease. It cannot be wondered that a superabundance of vitiated bile in the stomach, and intestines, was formerly, and by some is yet regarded, as the immediate cause of Cholera, When the discharge of bile from the stomach and bowels, is the most prominent feature in the disease. — but by these pathologists, what is considered the first stage of this disease, is overlooked, and one of the consequences, the morbid de-

-ection of bile, is taken as the cause. From the de-
-scription of Cholera as given by Sydenham, and other
authors, we learn that the stools at first are without
admixture of bile. — nor is the bile discharged from
the stomach till the disease has continued some time.
At length, however, a great quantity of vitiated bile
appears, and it is accused of being the cause of all the
mischief. The remote or predisposing cause of Chole-
-ra is manifestly high atmospheric temperature.
It is much more frequent during the months of August
and September, when cool nights alternate with hot
days, tho as Sydenham observes, that both in hot cli-
-mates, and in hot seasons of mild climates, occasional
falls of rain have been particularly followed by epi-
-demic Cholera. This circumstance tends to elucidate
and confirm the pathology of the disease now generally
received. Heat predisposed to cholera by inordinately
exciting the cutaneous and hepatic functions, thus in-
-ducing a state of indirect debility, and when from ex-
-posure to cool and damp night air, the perspiration
is checked, and the hepatic secretion through sympathy,
the blood retreats from the surface to the internal organs,
when the liver and portal circulation, the stomach
and capillaries of the mucous membrane of the intestines,
become engorged; which congestion it may be presum-
-ed, produces the morbid irritability of the two latter organs,
and consequently the characteristic phenomena of the
disease. Marsh effluvia has nothing to do in produ-
-cing this disease, except incidentally: but if the system
be under the influence of miasma, which as a power-
-ful agent in deranging the functions of the liver, is well
known, and the person is exposed to heat, the predispo-
-sition to Cholera will be enhanced very considerably, and

of the disease be excited, when the system is thus under the combined operation of miasma, and high atmospheric temperature, no doubt but it will be of a more dangerous character, and the treatment after the first symptoms are introduced, would have to be modified.
Cholera is excited by other causes besides cold applied to the surface of the body, viz. by drinking cold liquids, - taking indigestible and irritating articles of food. - All articles of food to which the stomach is not accustomed, and also such articles as excite the stomach in different ways, as drinking milk after eating fresh fish, will most certainly excite cholera, but causes of this kind never produce the disease unless the system is predisposed to it, by a debilitated state of the digestive organs, or by general prostration of the system from the influence of high atmospheric temperature. Dr Ebule gives the most satisfactory explanation of the extreme irritability of the stomach and bowels, and the excessive vomiting and purging: he asks, Can hepatic torpor, and congestion in the portal system of vessels give rise to this morbid condition of the alimentary canal? or are we to consider this state of the liver, and the general engorgement of the portal vessels only as concomitant phenomena, and in no way causative of the characteristic gastric and intestinal affection? The fact that the symptoms begin to abate almost always as soon as the liver resumes its function, and pours out a copious flood of bile, strongly favours the opinion, that hepatic torpor and congestion have no small share in the production of the gastro-intestinal disorder. In the malignant grades of bilious fever, the vomiting during the first stage is often incessant, and extremely distressing: and the fluid ejected is wholly free from bilious matter.
If death takes place in this stage, the liver and the vessels

of the stomach are always found exceedingly engorged with blood. but when large evacuations of bile take place, an abatement of the symptoms usually ensues.
In the Cholera of India, in subjects who die in the first stage, and in Cholera infantum, the liver and mucous membrane of the intestines are found upon dissection to be greatly engorged with blood.

Treatment. If vomiting alone is present, an injection will be proper; and if purging only exists, an emetic will effect a cure. — these remedies can only be employed in slight cases. they may excite both symptoms, but the disease will be mild, and it will require a much smaller quantity of opium to effect a perfect cure. But in the perfectly formed Cholera, nothing but Opium in some form is to be relied on. The first and principal indications in the treatment of the Cholera of adults are, to allay, as speedily as possible, the morbid irritability of the stomach and bowels, — to check the inordinate secretion of bile and determine the circulation from the internal to the external parts. These indications are fulfilled by giving large doses of Laudanum, till the vomiting and purging are stopped, assisted by a sinapism laid over the epigastrium; or what is better than the sinapism for equalizing the circulation by inviting to the surface, the application of cloths wrung out in hot water, to the stomach and extremities. The sinapism to the epigastrium, and hot cloths to the extremities might easily be used conjointly, and undoubtedly with more benefit than either remedy alone. The sinapism would aid more the Laudanum in allaying the irritability of the stomach, and the hot cloths would communicate warmth to the cold extremities

and thus produce general revulsion to the surface.
In the September number of the Journal of Medicine & Surgery, edited by Dr Smith, external warmth is highly extolled in the treatment of Cholera Morbus. In this Journal I first saw external warmth as particularly and forcibly recommended, as it appears to discover: tho. it is mentioned by most authors, but in such a vague and undecided manner, that it will scarcely catch the eye of the reader, as a remedy at all relied on, or used in the treatment of the disease. The writer in this Journal says "there is no remedy employed in the treatment of Cholera, to which he ascribes more importance than to external warmth; he has rarely seen the disease yield till the surface became warm, and as rarely saw it continue, when warmth had once been established. He plunges the feet and legs of his patient in warm water, applies cloths wrung out in hot water to the stomach and around the extremities. a mode of applying warmth and moisture more generally to the surface is recommended: which consists in plunging billets of wood into hot water. These are to be wrapped in cloths and applied round the body. When warm water alone does not seem sufficient to stimulate the surface to its natural action, salt and mustard are added to the water in which the feet are plunged.
In violent cases, it is useless to give less than 100 drops of laudanum at the first dose, and the same quantity mixed with a small portion of warm water thrown into the rectum. If vomiting occurs soon after the first dose is taken, the laudanum should be repeated in doses of 30 or 40 drops every fifteen minutes, until its influence on the system be fully obtained. We want neither calomel, nor emetics, we want nothing to wash out the

stomach, such as chamomile tea, balm tea, or warm water in the treatment of this stage of the disease.
Dr. Ayre speaks highly in favour of minute and frequent doses of calomel in Cholera, but such treatment cannot be depended on. After the violent symptoms are reduced by Laudanum and the other means, if there remains pain in the side, and the narcotic and constipating effects of opium are manifested, a few grains, or half grain doses of Calomel, or a few grains of blue pill, with a grain of Ipecacuanha, should be taken every evening upon going to bed; or by rubbing the side with a little mercurial ointment, will soon relieve those symptoms, by stimulating the action of the liver to a regular secretion. Emetics above all remedies should be forbidden; there can be no objection to them, when there is not a perfectly formed Cholera, when purging alone exists, but in the completely formed Cholera they are almost certain death. When the laudanum is immediately rejected by the stomach and it cannot be made to operate on the system, either through the stomach, or by injections, we may obtain its effects by external application, with almost the same promptitude and certainty as if it were retained by the stomach. For this purpose the cuticle should be removed from the epigastrium; which may be speedily done by means of nitric acid; two parts of this acid diluted with one of water, is to be applied with a sponge upon the region of the stomach, and as soon as the patient feels considerable pain, the part is to be washed with a solution of the Carb. Potassæ. The cuticle may now be easily detached, and upon the raw cutis pronto to twelve grains of morphia may be applied, either in the form of plaster, or by sprinkling the powder on the part, and covering it with a piece of linen thinly spread with

simple cerate. By this procedure we obtain the advantage of a powerful counterirritating application, and the full influence of the opium. Instead of sinapisms to the epi-gastrium, we may use strong rubefacient embrocations, & when exhaustion is great, and cramps of the extremities ex-ist much benefit will result from rubefacient fric-tions, particularly with a strong tincture of Capsicum. Brandy may be given in the last stages of the disease, when the pulse sinks and the extremities become cold. The patient should be wrapped in flannels soaked in hot brandy. Recourse also must be had to diffusible stimuli. Dr Eberle recommends a solution of Camphor in sulphuric ether, as one of the best articles of this kind. Of a solution of Camphor ʒj in Ether ʒj - a tea spoonful should be given occasionally till reaction is brought on.

After the disease is subdued the patient should take light and nourishing diet. - wear a flannel roller round the abdomen, and if the digestive powers remain weak, some bitter infusions with a few grains of Carb. Ammoniae should be taken three or four times daily. Dr Potter remarks in his lectures, that there is no case of Cholera Morbus, while the pulse is perceptible, that cannot be cured if a sufficient quantity of Laudanum is administered. - to an adult he never gives less than 100 drops the first dose, and directs it to be given without weight or measure, only directed and governed by effects. Dr Potter gave to one patient an ounce and a half of Laud-anum, before he could subdue the disease, but his patient was well and at his usual business the next day. Dr P. has never found it necessary to resort to the external application of morphia, but has had the disease to yield in a short time to large doses of Laudanum.

Addendum. Does not the Spts. Turpentine have just claim to the attention of Physicians in the treatment of this dangerous malady, from its known & acknowledged virtues in various diseases which resemble in some important respects this disease? Not to speak of all the diseases it has been used in, every one knows of Dr Physic's practice of giving it to check the violent vomiting in yellow fever, and of its almost universal use in all Spasmodic affections. In the malignant form of bilious fever, or yellow fever, the vomiting in the first stage is often violent, but the fluid thrown up is free from bile; if the patient dies in this state, the liver and vessels of the stomach are found greatly engorged with blood. It was in this prostrated state of yellow fever Dr Physic used the turpentine, and we see the resemblance of the symptoms and the perfect resemblance of the post-mortem appearances in ~~the first stage of Cholera Morbus~~ this form of yellow fever, to the symptoms and appearances in the first stage of Cholera Morbus, tho' in the two diseases they are produced by very different causes. The practice of using the in any variety of yellow fever is very justly condemned by the best Physicians of the present day, but as its forbidden on account of the dread of consequent fever, that objection does not exist in its application to this disease. The turpentine would be particularly worthy of a trial, when the stomach will not retain the Laudanum long enough for it to produce its effects, or when there is an idiosyncrasy forbidding its use. In such cases the use of turpentine largely, internally and externally, would appear to hold out high hopes of relief.—

Cholera Infantum

The cholera of infants differs in several important respects from Cholera Morbus. It comes on very gradually, and frequently more or less diarrhoea continues for several days before vomiting supervenes. — It is liable to assume a chronic form, which is never the case in the cholera of adults, and is always attended with cerebral affection. In the majority of cases of Cholera infantum Dr Potter remarks, there cannot be said to be fever unless the heat of the abdomen and head is called fever. The liver is as inactive in this, as in the preceding form of Cholera in the first stage. If the disease does not end fatally in a few days, the patient begins to emaciate, the pulse becomes small, frequent, and irritated, vomiting incalculably frequent. Twenty or thirty stools with sometimes is passed daily, and often certain articles taken into the stomach pass off unchanged, the fæces frequently colourless showing the torpid state of the liver. The thirst is very great, children who can talk sometimes say the fæces burn them, the extremities become cold, the abdomen hard and swelled, the head and abdomen extremely hot, so much so, that the whole heat of the body appears to be centred in those parts, the skin is dry and harsh, the eyes dull and sunk or glassy, the countenance pale and sunken the child sleeps with the eyes but half closed, rolls about his head when awake, and if the disease is not subdued by proper remedies, the little sufferer sinks into a state of insensibility and coma, and at last dies under symptoms resembling those of hydrocephalus. When Cholera infantum is produced by moderate heat, it changes

of weather. It is more inflammatory than when there is great and constant heat producing great debility. In the latter case, the powers of the system being more prostrated, and reaction not taking place to the same degree, the disease is more difficult to treat. It is said, when the disease is protracted in its course, aphthae appear on the tongue, and inside of the cheeks. The face acquires an edematous appearance, the alvine discharges become acrid as to excoriate the rectum; and towards the fatal conclusion spots of blood under the cuticle sometimes appear on various parts of the surface. The duration of Cholera infantum is very variable. It may prove fatal in four or six hours, or continue for weeks, and even for months, until the child is a mere skeleton, and yet the case terminate favorably. When the disease does end fatally, death takes place in the majority of cases before the end of the ninth day. If death takes place early in the disease, the vessels of the liver and mucous membrane of the alimentary canal are engorged with blood, and when the disease has continued for some length of time before death ulceration and even abrasion of the lining membrane of the stomach and bowels are discovered. Heat is the principal predisposing cause of both the Cholera of infants and of adults; while by the symptoms, the duration, and the chronic form of Cholera infantum, it is shown to differ very much from Cholera Morbus. This difference I should think is produced by other circumstances besides the irritation of dentition, and the contaminated air of crowded cities; that dentition and contaminated air assist in producing the disease is proved by its occurring almost exclusively during the period of primary den-

-tition, and being much more prevalent in large and crowed cities, than in the country. The difference is caused by children not being exposed so directly and suddenly, neither to heat, nor to the exciting causes of the disease. In adults the system is suddenly exposed to a great degree of heat, and generally evacuations being taken at the same time assist the high degree of temperature in bringing on a state of prostration and indirect debility. During this state of great debility, the system is also exposed more suddenly to higher degrees of the exciting causes, such as cool and damp night air, or by taking large draughts of cold fluid, or indigestible articles of food, the exciting causes become more powerful than those that act on infants. From the great violence of the causes operating on adults, the reaction of the system is almost entirely prevented. The only symptom of reaction in Cholera Morbus is the increased secretion of the liver, but in Cholera infantum there are almost always distinctly febrile symptoms, the extreme heat of the abdomen and head evidencing reaction; but the flowing of bile which alone shows reaction in Cholera morbus, is entirely absent in Cholera infantum. In both varieties of Cholera the stomach and alimentary canal, primarily manifest the symptoms of disease, though in both, the liver is more dangerously disordered & to it we have to direct our remedies principally.

In the second stage of the Cholera of adults, from the enormous secretion of bile, which is constantly irritating the extremely irritable stomach and bowels, aggravating the vomiting and purging, we are compelled to give in large doses such articles as will stop the secretion, and when this is done, the opposite course is pursued. such articles must be given as will gently excite the liver to its healthy process.

But in Cholera infantum, a similar course of treatment cannot be pursued for several reasons, - first, because of the greater general reaction, the higher febrile excitement, secondly - because of the peculiar cerebral affection, which forbids altogether the use of the article decidedly the most valuable, and almost the only remedy in the Cholera of adults; as it is well known that the effects of opium in all its forms are particularly determined to the brain, and lastly because of the torpor of the liver, which opium would greatly serve to increase. Therefore in Cholera infantum stimulus must be used to restore the functions of the liver and skin, and to obviate irritation and congestion in the brain. Heat acts in the same way in predisposing to Cholera infantum, as it does in Cholera Morbus. The functions of the skin and liver being highly excited thus bringing on a state of indirect debility. If the child be now exposed to the damp night air, or damp clothes are put on it, or acid is taken into the stomach, such as the unripe acid fruits, or any thing that disturbs the stomach, the disease will be excited. If the child has worms, or the mothers milk disagrees with the childs stomach, (which it will do by the mother eating acid fruits or pickles) the disease will be very apt to be produced. Children not weaned, are not so apt to have the disease, therefore children should not be weaned in a large city, between the months of June and October. In this as in the other varieties of Cholera, there is always great congestion of the liver, and of the vessels of the mucous membrane of the stomach and bowels. High atmospheric temperature - the irritation of dentition, - and the impure air of cities are the principal exciting causes of Cholera infantum,

the latter cause must have considerable share in predisposing to this disease, as well as the greater heat of cities. Marsh effluvia has nothing to do in producing this disease. This is proved by the disease never assuming a remittent form, nor is it ever preceded by a chill, and further by its prevailing in June and July, before the diseases of miasma make their appearance, and disappearing at the time, they commence, and by its prevailing in countries where miasma is known not to exist. The prophylactics, are cleanliness in dress and body, washing the child in cold water, the use of flannel ~~xxxxx, xx the xxx xxx xxxxx~~ the child should sleep in long flannel gowns, as the bed clothes are apt to be thrown off; it is the cold mornings before day, after having been exposed to the heat of the previous day, which most frequently excites the disease. Abstinence from all fruit, and indigestible food should be, by all means, attended to. The reason that children are more subject to this disease just after they are weaned, is, the practice of giving them animal food, and that which is not easily digested by their delicate stomachs.

Treatment. It appears that torpor of the liver and skin, in connection with cerebral irritation, constitutes the immediate cause of the excessive irritability of the stomach and bowels. Our principal object must be, therefore, to restore these two functions, and to ~~xxxxxxx~~ obviate irritation and congestion in the brain. To answer these purposes Dr Potter's practice is to administer very small doses of calomel. To a child two years, he gives ½ gr. Calomel two or three times a day, and when younger, ¼ gr. is sufficient. Given the same number of times. If the Calomel is given in large doses, it

prostrates the little strength the child has left, but in small doses it alters the secretions; the watery evacuations will soon become of greater consistence, and the vomiting and purging cease. Dr Potter observes that other articles may be given with calomel to assist its operation, but that nothing without calomel can cure the disease; he has used the ½ Dr. doses, three times a day, and thinks no case requires more than ½ Dr. He forbids the use of opium as the smallest doses produce such stupor, that the child never recovers from it, but recommends in case of total suppression of the appetite, milk boiled with red oak bark, or black lungwort tea, or tinct. Rino. Sometimes one of these will lay on the stomach when the others will not. When acid is in the stomach it is necessary to give a little magnesia upon the calomel, this makes the calomel operate sooner and better. Blistering has been recommended, ~~in the last stage~~ but Dr P. thinks it improper in the first stage; in the last stages blisters may be used to excite the system when tonics are given. Dr P. remarks, that a patient should never be despaired of, while the least action of the pulse can be perceived, he says, he never lost a patient in Cholera infantum during his whole practice of thirty five years.

The practice of Dr Eberle, as seen in his late work on the Practice of medicine, is similar to the preceding in administering minute doses of calomel, but more additional means are advised. He commences his treatment by applying ten or twelve leeches to the temples, the exhibition of small doses of calomel and Ipecacuanha, and a large stimulating poultice over the abdomen. He says he is fully persuaded that great benefit will result from local depletion from the

head, as well as, from the application of blisters on the back of the neck, or behind the ears. Dr L. gives from 5 to 15 gr. of Calomel in union with half a grain of Ipecacuanha, every hour or two, and continues this treatment till the evacuations become mixed with biliary matter: he observes that it should be borne in mind that as long as the liver remains torpid, the disease should be regarded as prospering all its violence, whatever temporary abatement may occur in the vomiting and purging, this is a most useful and important observation. The appearance of bile whether green or dark, is always favourable. Dr Eberle thinks the Ipecacuanha in small doses a most excellent auxiliary to the Calomel, its tendency to counteract the inordinate action of the bowels, when given in such doses, is well known. When from a turnid, and tense state of the abdomen, there is reason to believe the bowels are loaded with faecal matter, Dr L. directs the quantity of Calomel at each dose, to be increased so as to procure its purgative operation; or a dose of castor oil to be given. Dr L. also employs external revulsive applications to the abdomen; rubefacient and vesicatory,- but he fortunately remarks that when the habit is phlogistic, and the pulse manifestly febrile, leeching both from the head and region of the liver are important preliminaries to the employment of vesicatories. He also says, the warm bath is especially necessary, when the skin is dry & harsh, and the pulse quick and tense.
With due respect to the character, and deference to the opinion, of Dr Eberle as a physician of high standing, I think some parts of his practice in this disease may, and should be, subjected to criticism.

That part of his practice, which appears decidedly faulty, and indeed would be positively injurious, is the application of stimulating poultices, or blisters to the abdomen in the commencement of the disease, and particularly, the use of the warm bath, which he especially recommends in that stage of the disease when the skin is dry and harsh, and the pulse quick, and tense. The most constant and indeed the essential symptoms of Cholera Infantum, are coldness of the extremities, - extreme heat of the abdomen and head, and most generally the pulse is frequent and hard, resisting pressure; but in some cases where very high atmospheric temperature has so prostrated the powers of life, that general reaction does not take place, the pulse then is small, frequent & feeble, not resisting pressure; in this case, the head and abdomen may, or may not be hot, but never to the same degree as in the former case.

It is one of the most important, necessary, and at the present time, indisputable precepts in the practice of medicine, that in all diseases, where febrile symptoms of a decided character exist, neither blisters, stimulating embrocations, nor the warm bath, can be employed without doing more injury, by exciting and increasing the circulation, than benefit, by the revulsion and counter-irritation produced. If such then be the fact, it is obvious, that the stimulating poultices, blisters, or warm bath, should not be employed, where and when Dr Eberle advises. Leeching at the temples, or behind the ears, will no doubt afford great relief and advantage to the patient; but if the excitant remedies have a place at all in the treatment of Cholera infantum, it can only be during the last stage, when they may be used, to excite the system, while tonics are given; or in the prostra-

-ted, exhausted state of the system, where reaction has not come on. This last state Dr Eberle speaks of, and shows the inconsistency of the practice recommended in the febrile state of the disease, by using in this, the same ex-
-ternal stimulating means: he thus remarks, that when from the violence and rapidity of the disease, or its long continuance, the exhaustion becomes very great; - the extremities cold, and the pulse very small and feeble, in-
-ternal as well as external stimulants become necessary. Under such circumstances, stimulating frictions, together with the internal use of wine whey, milk punch, or a weak solution of Carb. ammoniae, are indispensable, to support the sinking energies of the system.
In the febrile state, instead of applying blisters behind the ears, or stimulating poultices to the abdomen, I think it would accord more with the sound principles of practice, to endeavour to equalize the circulation, by applying to the abdomen and head, which are preternaturally hot, cloths wet with cold water, while to the extremities, which are morbidly cold, cloths wrung out in hot water, should be applied.
When the disease becomes chronic, attended with great debility and relaxation, the employment of uninitating tonics are much better calculated to afford relief, than astrin-
-gents, and absorbents. To relieve the colic pains which occur in the chronic state of this disease, from flatulent distention, a few drops of the Oil of Turpentine, or oil of Juniper, have been advised. Particular attention must be paid to the proper regulation of the diet, throughout the whole course of the disease. If the child is weaned nothing but the mildest fluid articles of food should be allowed. Articles which most nearly resemble the mothers milk, should be used: boiled milk and water

sweetened. the jelly of hartshorn shavings being added. make a mixture approaching nearest to the nature of human milk. The liquid preparations of arrowroot tapioca, rice, or sago; thin oatmeal gruel, barley decoction, beef tea, or weak chicken broth are proper. Dr Clarke observes, that he has known the two latter articles, to produce a favourable change in the state of the stomach and bowels. We should be careful in prescribing milk, to direct, that it be used before the cream separates; as the milk, if the cream be separated, will form tenacious coagula on the stomach, which will be very difficult of digestion, as is proved by their coagula passing off in the alvine discharges. The practice of giving what is called pap (which is boiled flour sweetened) is a most injurious one; as the flour forms a heavy, tough, tenacious mass, which is very difficult of digestion.

Introduction

An

Essay

on

Diarrhoea

Submitted To The examination

of The Dean

The Medical Faculty of The

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For The Degree of Doct of Medicine

By William Dudley

of Virginia

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Diarrhoea

Diarrhoea is an affection of the bowels characterised by frequent and unusually copious liquid stools of a peculiar character attended with griping more or less severe according to the sensibility of the intestines without tenesmus, and generally unattended with fever

Dr Cullen says diarrhoea has for its proximate cause an increased peristaltic action of the intestines — In every case of diarrhoea the peristaltic action of the intestines is increased; But this definition of it does not seem to point out the true pathological of the disease for in one case, the irritability of the intestine may be in a natural state, in which case a much stronger cause would be required to produce diarrhoea, than if they were preternaturally irritable. In another case the irritability of the intestines may be below the natural standard, then a cause

which would act effectually in the production of diarrhoea in the natural state of affairs, would in this last have no effect. It therefore seems more reasonable to say that irritation is the proximate cause of diarrhoea and the increased peristaltic action of the intestines, together with the increased secretions are the consequence of irritation.

Diarrhoea is an affection nearly akin to Dysentery; indeed it may be said to be the first grade of Dysentery; for if it be suffered to run on for a considerable length of time, or if from any cause it should become aggravated it cannot easily be distinguished from that disease. The chief distinction between the two, consists in the appearance of the evacuations; in diarrhoea the evacuations are of a feculent character, whereas in Dysentery they consist of mucus and blood.

Whenever diarrhoea assumes this character

amely, mucus or Bloody evacuations attend
d with tenesmus, it may with propriety
be called dysentery
Causes, many of the causes which produce
diarhoea in one, will produce dysentery in
nother, catarh in a third, and Rheumatism
in a fourth. Diarhoea may properly be call
ed a catarh of the intestines
diarhoea may be produced by causes acting
directly on the mucus membrane, or indir
ectly through the system. A very common cause
of diarhoea is some indigestible article of
food, such as the skin of vegetables, or
that of some of the meats not prepared so as
to be acted on by the gastric juice.
more than this articles may be submitted to
the stomach for digestion which are diges
table but on account of the immoderate quant
ity which is sometimes taken in, the stomach
is unable to dispose of all of it, consequently

if that part which has not undergone the di
gestive process be suffered to pass along the
intestinal canal, it will act as a foreign
substance and diarrhoea will be the ne
cessary result in this case. The undigested
food will generally carry along with it its own
chyle; but may we not suppose that a consi
derable quantity of the chyle is frequently
carried along with it? for we think it pro
bable that the imitation may commence in
the superior part of the alimentary canal
as well as in any other part of it; if so a
portion of chyle must necessarily be carri
ed off. perhaps This may account in part for the
debility which so often attends diarrhoea
acting in some manner like the abstraction
of blood — for as the blood derives its nutri
tive qualities from the chyle so the absti
nence of chyle lessens the quantity of new

tition which would otherwise be assimi
lated to the animal machine
As an undue proportion of food in a he
althy stomach may produce diarrhoea
so in a weakened stomach a small quan
tity of food if not of that kind and quan
tity which the stomach requires will
produce the same effect in this instance
as a superficial examination we might
be led to suppose that the primary defi
ect was seated in the intestines but if
attention be paid to the dejections it will
be seen that the stomach is the sole seat
of the disease for some portion of the
food will pass off undigested clear
ly showing that the stomach is in a
weakened condition
Diarrhoea from Certain kinds of water emeti
mes produce it more especially that impreg

ated with lime and salt. cider which has
not undergone the process of fermentation
unripe fruits, vitiated secretions from the
liver, and many other irritating causes
which it is unnecessary to mention
It sometimes attends the latter stage of inflam
matory diseases. It also occurs as symptom
atic of other diseases occasionally
Most of the causes which act directly on
the mucous membranes of the intestines in
the production of diarrhoea generally carry
along with them their own cure, nevertheless
if the intestines have been in a previous
ly irritable condition or the patient be la
bouring under some organic visceral dise
ase, then causes though apparently trivi
al, may aid much in the devel
opement of a disease not as yet comple
tely formed, as well as add speed to that

already formed. Among the causes which act through the system in producing diarrhoea may be mentioned heat and cold: Cold seems to act much more effectually in the production of diarrhoea as acute as in some other diseases if it be conjoined with moisture
Moisture seems to evaporate the heat from the surface, and cold determines the Blood to the deep seated viscera, in consequence of which the serral organs receive an preternatural quantity of Blood. The secretion from the liver as well as from the other viscera becomes increased in quantity, and diarrhoea speedily follows.
Diarrhoea prevails epidemically during acute states of the atmosphere, as towards autumn when the days are still hot, and the nights beginning to be cold with copious

dews, diarrhoea prevails to a considerable extent. Fear sometimes produces diarrhoea

Prognosis— Though diarrhoea is not of its self a dangerous disease yet there are many circumstances which sometimes make it formidable, and very often requiring our utmost exertions to arrest it

The prognosis in diarrhoea is deduced from the nature of the disease, whether sympathetic or otherwise, the age, constitution, habits of the individual, the length of time it has existed &

if no great irritability or no organic visceral disease exist, diarrhoea resulting from indigestible articles, or irritating drinks, consisting of feculent matter with vitiated secretions may be easily checked, but if great irritability, or some of the viscera be diseased it may be but the commencement of a troublesome disease

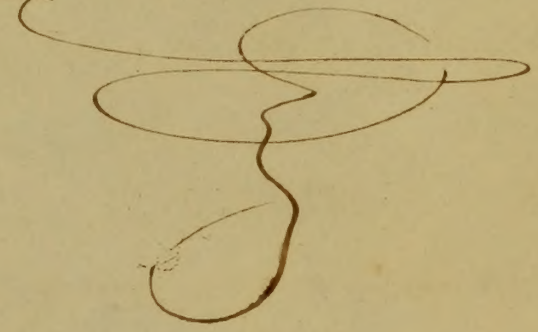
Diarrhoea depending on a disturbance of the whole system returning frequently after it has been effectually stopped may eventually prove fatal by producing general debility, great debility with loss of appetite & When from a dry state of the skin a moisture supervenes, if the discharges become fewer, if the fever disappear as well as the griping and no increase of debility the symptoms are favourable

Treatment The means for the cure of diarrhoea, are first the removal of the cause secondly, the allaying of the irritation which follows. For removing the cause those ~~Medicines and Herbs~~ used, which are least likely to produce irritation; very often simply removing the cause will be sufficient to effect a cure; if this do not have the desired effect it is presumable that the disease is

kept up by irritation to allay this the usual means which are used to allay irritation must be put in execution
Diarrhoea produced by indigestible articles may be cured by a dose of Castor oil
That which is produced by improper articles of food must be treated by paying attention to diet, and submitting to the stomach for digestion the proper kind as well as quantity of food. The symptomatic diarrhoea is treated on the same general principle namely by the removal of the first affection if this can be done. The consequences which result will most commonly cease without the aid of medicine. But there are some symptomatic diarrhoeas which it would be improper to arrest, That which very frequently attends the period of dentition may be mentioned. In this instance it

seems to counteract the determination of
Blood to the head, which is count to take
place during this period in such a case
it would be improper to assist it unless
it be for the comfort as well as for the ben
efit of the patient
Diarrhoea which is caused by the applica
tion of cold must be treated on the same p
rinciple. As in this case the equilibrium
of the circulation is destroyed with too gre
at an accumulation of Blood in the sever
al viscera, it becomes necessary in the first
place to restore the equilibrium, and treat
the consequences as circumstances require
For restoring the equilibrium a powder compos
ed of Ipicacuanna opium & calomel will
most commonly be sufficient to effect a cure
Diarrhoea resulting from retained secretions from
the liver must be cured by removing the cause
which produced the retained secretions

for this purpose The Blue pill may be used
If dearrhoea exist long it is apt to assume
the Dysenteric symptoms then it must be
treated as Dysentery



Introduction

In compliance with a law of this University which makes it obligatory on every student to write a dissertation, it necessarily becomes a duty with which I cannot dispense, although I feel my insufficiency to do justice to any subject, and in looking around for a suitable subject that of Opium presents itself to my consideration as an article of the materia medica than which few are of more importance to a physician in a practical point of view, and which has been perhaps more abused than any article of the materia medica with which I am acquainted. It is by the ignorant administered without any regard to the condition of the system or state of disease and from this circumstance it has lost much of its deserved celebrity. In diseases of children it is a very common remedy and is frequently prescribed by nurses and mothers whenever the child seems unwell and in consequence of its

anodyne quality it often gives the little sufferer ease without contributing in the least to the cure of the disease.
But this should not detract from its value. for when given in well regulated doses and in a proper condition of the system, I think it is not surpassed in point of value by any article in the Materia Medica.

Opium

As to the history and preperations of opium I deem it unnecessary to say any thing, as they may be found in nearly all the works on the materia medica.

I shall therefore proceed in the first place to take a cursory view of its effects and modus operandi. Secondly speak of its practical application in the cure of diseases. and thirdly say something of the bad consequences arising from an improper use of this article.

First of its effects and modus Operandi. The question whether Opium, is to be regarded as a sedative or stimulant, has been much agitated. I believe the most prevalent opinion at present is that it is unequivocally a stimulant. The effect vary greatly according to the quantity given In small doses the effects are excitement of the nervous and vascular systems, the cerebral functions in particular are rendered more active and energetic, volition is stronger and

more prompt. and a temporary vigour is felt in all the voluntary exertions of the body, and in short a feeling is excited which bids defiance to the ills of life.

If the dose be increased its narcotic effect becomes more developed, a species of ebriety ensues, the blood becomes con=
=gested in the vessels of the brain, voluntary motion is dimin=
=ished, sensibility is lessened, vision is much impaired and finally if the dose be sufficiently large the brain ceases to exercise its control over the animal functions and profound and heavy sleep weighs down every concious faculty.

If the dose have been very large the sleep becomes more and more lethargic, respiration is imperfectly performed, the blood is imperfectly decarbonised, which tends further to diminish the cerebral functions, until they finally stop with all the other movements of the animal system. such are the immediate effects of a large dose of Opium. there are other consequences however which follow its long continued or accustomed use demonstrating

with equal force the deadly influence of this article upon the living body when improperly used. of these we shall say something in another place.

The primary effect of Opium is an action on the sentient extremeties of the part to which it is applied. it is then conveyed to the brain through the medium of the nerves, and from the brain through the same medium to the general system

In a small or regular dose Opium increases the force and frequency of the pulse. When given in a large dose however its excitant operation is extremely transient and the pulse almost immediately becomes slower and fuller. It lessens irritability and the peristaltic action of the intestinal canal, It sometimes occasions a difficulty and pain in passing urin. It lessens many of the secretions while it increases some others. It diminishes the secretion of the gastric and pancreatic juices. The mucous of the nose bronchia and bowels and likewise the secretion of bile

air said to be diminished by the action of Opium.
The serous secretions and especially that of the skin are considerably increased. and the aqueous exhalations from the lungs are likewise said by some to be increased.
It at first excites but afterwards diminishes the action of the sensorial powers, hence its applicability in all cases where there is pain and nervous irritability not attended with an inflamatory condition of the system
From idiosyncrasy there are some individuals who cannot take Opium in consequence of the distressing nausea and headache which it produces, in such cases we may resort to some of its preperations with advantage, there are also a few cases in which it acts as an aperient independant of its relaxing effect.
According to our arrangement we shall now proceed to speak of the practical application of Opium in the cure of diseases.
In advanced stages of Typhus when there is much

watchfulness and a small frequent and weak pulse attended with delirium, weak convulsive motions and other symptoms of nervous irritation, Opium is one of our best remedies, Where there is local inflomation Opium combined with Camphor and a small quantity of Antm. Tart. often proves beneficial

Opium has been recommended in every stage of Intermitent fever, we think this is not a safe mode of practice, but after the patient has been sufficiently evacuated and the disease continues we may then resort to this article with advantage. A full dose of Opium an hour or half hour before the expected paroxysm exhilerates the spirits and produces an agreable glow over the whole surface and will often remove or mitigate the paroxysm.

In the inflamatory form of Rheumatism Opium is improper it may be given however in the subacute form with advantage. In cases of this kind it should be given

with a view to its diaphoretic effect and to ensure this it is best given in the form of Pulv. Ipecac. Comps.. In Chronic Catarrh or in recent cases unattended by any phlogistic diathesis Opium is a remedy of great value, It is particularly useful in long standing catarrhs of old persons where there is a profuse secretion of mucous in the bronchia. Where the expectoration is scanty it is best given in combination with some expectorant for this purpose the syrup Squills with Tra. Opii. Camph. is perhaps as useful a combination as we possess.

In the last stage of Phthisis Pulmonalis, it is of all articles the most valuable, it allays pain, relieves the cough, lessens diarrhoea, and for a time supports the sinking powers of life, And when all other remedies have been given up and hope itself is ready to expire, it soothes the passage of the sufferer to the grave. It is to those therefore whose lot it is

to suffer with Consumption and other such lingering diseases that it proves to be the most valuabl of all medicines

In the commencement of Dysentary when the febrile symptoms run high, Opium is improper, but after the inflamatory symptoms have been subdued by proper depleting measures it may be give with advantage. In the chronic form of this disease it may be given with advantage, in combination with Calomel and Ipecacuanha. In distressing tenesmus a solution of Opium in some mucilagenous fluid in the form of an enema will be highly servisable.

In Chronic Diarrhoea Opium in combination with small doses of Calomel constitutes one of the most important remedies we possess in the treatment of such cases.

In Cholera Opium is our principal remedy and unless given in large doses little benefit

will result from the use of it.

In the Cholera of Infants it is a doubtful remedy, but if the system should become irritable Opium may be used in combination with Calomel with advantage

For the relief of those distressing pains of the stomach, which frequently attend Dyspepsia, small doses of Opium is our principal remedy, but in the exhibition of this medicine in such cases we should be guarded against a habit being formed by the patient which would ultimately prove highly pernicious to his welfare, and one from which he could not easily break himself.

In Hemorrhage it may be laid down as a general rule, that the use of Opium is improper where there is much vascular excitement, but in Hæmoptysis and Uterine Hemorrhage attended with an irritable state of the system and a small contracted

pulses it is a valuable remedy.

In Colica Pictonum Opium is a valuable remedy if it should come on without fever Opium may be given in the first stage. but if there should be fever we should first bleed and then give a dose of Calomel and Opium and repeat as often as necesary.

In Mania A Potu when it depends upon an abstraction of stimuli Opium is a valuable medi=cine and should be given in large doses but if given in the inflamatory state it would be apt to produce Apoplexy.

In Tetanus Opium is one of the most valua=ble articles we posess. In this disease it should be given in large doses and repeated until it produ=ces some sensible effect on the system.

After using large doses of opium it should not be suspended suddenly for fear of producing great ins=tability of the system.

When injuries have been inflicted and there are any symptoms of approaching Tetanus the system should be kept under the influence of Opium until the symptoms disappear.

In Hysteria when the convulsions are violent and obstinate, and the patient suffers great pain, as is chiefly the case when the disease manifests itself chiefly in the abdominal viscera Opium may be used with great advantage in combination with some antispasmodic; During the intermission of the convulsions if the pain should be violent we may use Opium in the form of an enema with advantage.

In the second stage of Hydrophobia where there is great irritation Opium may be used as freely as in Tetanus (we think it would be more likely to succeed in this disease if given in combination with Calomel.

In cholic if the spasms are very violent Opium may be used in the first stage in combination with a

suitable cathartic, and if the pain should continue after we have well evacuated the intestines Opium is our principal remedy.

In the Colic of Infants, laudnum may be often used with benefit in doses of half a drop or a drop and increased according to circumstances. But as before said it should be used with caution and never unless prescribed by some person who understands the proper time for its administration.

In Spasms occasioned by drinking or bathing in cold water, when the system is heated or the weather is very warm. Opium and its preparations say Dr Rush given in large doses is the only medicine on which we can rely with safety, laudnum in such cases is preferable to acid Opium

The Vinum Opii or a watery solution of Opium says Mr Ware is a valuable remedy in Opthalmia connected with local vascular weakness

In Chronic Syphilis attended with violent pains in

the bones and irritable painful ulcers Opium has often been found useful.

If the system should be very irritable under the use of Mercury at any time Opium may be used with benefit.

A watery solution of Opium is very useful as an injection in Gonorrhoea where there is chordee or great pain in the parts.

In Hernia. Humoralis where the pain is violent Opium may be used with advantage. It is likewise a valuable article in spasmodic stricture. diseases of the Prostate. in Strangulated Hernia from spasms and in all spasmodic affections where there is not too much vascular action Opium is our sheet anchor (In strangulated hernia the operation should not be perpetrated until after we have tried the effects of Opium).

As an antispasmodic and anodyne Opium is often a valuable medicine in Nephretis Calculosa, it is likewise

resorted to with the same advantage in the passage of gall stones; and to allay the pain which frequently occurs from the presense of a stone in the bladder Opium is a valuable article.

In that species of Mortification which occurs in old people, beginning at the extremety of one of the toes Mr Potty says Opium is a valuable remedy and with it he is convinced; he has saved lives which otherwise would have been lost.

We shall now proceed to enumerate some of the evils arising from an improper use of Opium; and in the first place we shall speak of the habitual Opium taker: who unless he is under the immediate stimulant effect of this powerful narcotic; shows all the symptoms of bodily and mental imbecility. He is fearful, low spirited and has a pallid cocentenance; he is harrassed with tormenting sensations, he is unfit for both mental and bodily exertions, he is fretful and feels pain in different

parts of his body. his extremities are cold. he is tormented with Dyspepsia. he cannot sleep, secondly in consequence of the morbid irritability of the system and the tormenting objects which are frequently presented to his imagination. he often suspects his most intimate friends to be his enemies. and that they are constantly devising schemes to perceive him of his property, reputation or life, and in consequence of this often forsakes his friends and seeks an asylum among strangers; thus leading a life which is miserable in the extreme

If these were the only bad effects arising from an improper use of Opium they are sufficient to entitle it to our consideration: For we frequently see men who were it not for the use of Opium might be ornaments to society.

In consequence of the anodyne quality of Opium it is often given, improperly in painful inflamatory diseases when the lancet should be our principal remedy

It is of great importance to form an accurate
inion respecting the treatment of this disease
ich is very short in its duration and
ended with extreme danger. I shall
fore describe the practice which is
ught by the learned Professor of the
ory and practice of Medicine in the
iversity of Maryland and which I my
lf have invariably found to succeed
ymtoms if the child be accurately noticed
me days before the appearance of the
oup it will be perceived to be fretful
active, drowsy, the eyes are somewhat suf
used and blood shot the complexion
somewhat muddy and livid there is
me degree of cough which resembles that
tending a common cold but sometimes has
metimes a peculiar shrill sound from
e commencement, this cough in the course
2 or 3 days becomes violent and —

troublesome it is then necessary to watch
the patient with great attention the dan-
gerous attack is made sometime during
the night sometimes immediately after the
child is put to bed but most frequent-
ly about mid night the cough on the
watch of danger, has a shrill barking
sound which has been likened to the
yelping of a fox the cough returns
redoubled fits the first of which
returns with redoubled fits the first
which though very violent is succ-
eeded in a few minutes by a second
longer and yet more violent. every
fit of coughing agitates the patient
to an extreme degree the face is
inflated and flushed the eyes are pro-
truded; a general tremor takes
place and there is a kind of convul-
sive struggle to renew respiration
at the close of each fit. there is

expectoration at the this period of the
ease; as the complaint increases are
metimes more troublesome; sometimes
y become less frequent: but an increase
fficulty of breathing comes on accompa
ied with a swelling of the throat
bout the place of the larynx: the hea
thrown back, in the agony of attempting
escape suffocation, as the extensors
the trunk, and of the legs, are som
times brought into action, to aggra
te effort, so that the whole body is
ent backwards as in tetanus; in
is effort and in this attitude the
atient expires. There is not an unu
ual sound produced by the cough
omething between the yelping and barking
a dog, which it is impossible
describe, but respiration is perfor
d with a hissing noise, as if the
rachea was closed up by some light

hongy body. the expretion of the coun
nance is allso apropiate and will alone
tray the disease to any one who has
er seen it there is much distention
e blom of the cheek is much heig
tened the eyes are swelled up wa
tery and exhibit great marks of suf
ferency. The trembley hurry, and westlegs
ness, though accompanied with heavy
leep proceed to an excessive degree
s the disease advances, and the heart
nd artery, are thrown into violent
alpitations, respiration becomes more
tridulous, is repeated with greater
xertions and at longer efforts un
till it ceases entirely sutch are the
rdinary course of the symtoms and
ourse of this disease, much diversity
however ~~of opinion~~ exists in relation
to the violence of this disease and
the phenomena which it exhibits

in some instances not more than a
m hours elapse betwene the commence
ment and termination of this disease
other cases the symptoms proceed
lowly to their acme, and the disease
protracted for many days an occa
tionally for weeks assuming a chronic
harester without perhaps having at
ny time manifested any very alarm
ing degree of violence. the ordinary
eriod occupied by this disease is
from 2 to 5 days Causes Cinanche Tra
cheatis is one of those ~~predispositions~~ in
llamitary affections for which a
predisposition appears not infreque
lly congenital, it is a fact which
atisfactively ascertained that chil
dren in some family are particular
y predisposed to the disease
while in others it never makes its
ppearance, in what this predisposi
tion

consists we can not tell we may say
it depends on a peculiar organisation
the mucous membrane of the larynx
and trachea may be correct but what
these organick peculiarities are it
would be in vain to enquire besides
this original or natural predispo
sition there is a nother age
Pinarch Tracheolis is a disease all
most peculiar to childhood but
not entirely confined to that class
of persons for it sometimes occurs
to adducts and in rude to persons
in advanced age but this instances
occur but seldom we may therefore
expect to find it occurring in
children from 2 to 5 years the
principle exciting cause is cold or
sudden visisitudes of atmosphere
importun here its greater prevalence
during the damp cold season of atum

Pathology, untill the time of Borhave
o one thought this disease an inflami
tory one, allthoug some Physetians before
is time used the antiplogistick plan
is strickly a plegmasial disease con
isting entirearly in an inflamed condition
the mucous membrane of the superior
ortion respiratory tube the correcness
this pathology is confirmed not only by
ts well know exciteing cause but espe
cially also by the more direct evidance
the symtoms of the disease and the
ppearance discovered on post mortem
xamination; the inflamation is not con
fined to the larynx and Trachea but
frequently communicated to the ~~lung~~
muscels of the nabouring parts and ind
eed it sometimes persues its course
the lungs and in propotion as it
ascends does the danger of the disease
crease owing its proximity to vital

hants — Treatment, the symtoms point
t the proper treatment to be persue
d in the management of this fright
full disease; for they indicate the
highest state of inflamation which
lone can be subdued by the most an
tiphlogistick plan, such as bloodlet
ing, Emetick, purgatives, blisters, and the
like. In the first place blood letting
lessons that highly excited action of
the lungs lessons the determination of
blood to the brain, takes of that disp
osition of the muscels supposed to be
spasmodick action and prepares the syste
m for other remedys — The next indication
is to throw of the phlem and mucus
which have collected in the trachea
for this perpose Emetichs are to be resor
ted to without hesidation - and the
Physician who turns a deaf ear to thes
indications will find himself overcome

with deficulty nor will he have much
use to congratulate himself on the
ccess of his practise - but the stomach
sometimes in such a torpid condition
this disease that is with difficulty
e can get the ordinary medicines to act
- it we should then have recourse to
e corrosive sublimate which was first
troduced in the management of this
rightfull malady by Dr Elbert of
maryland and to the use of it many objecti
ions have been started on account of its
roducing pain in the stomach nausea
hosm and the like; these inconveniances
ay be remidied by brandy and water
- brandy toddy the manner in which it is
chibated is to put 1 gr of the sublimate
- ℥j of water giving a tea spoon full
till free emesis is produced. Purgatives
e also usefull auxiliays in the treatment
this disease the mention of this class of

Medicines brings me to speak of Calomel
~~me~~ medicine which as a single remedy
more power in subducing this forma-
able disease than any other with which
e are acquainted the small doses in
hich it has been given has in some
easure brought it in disrepute but
e experiance of Dr Potter and my own
servations have led me irresistably
the conclution that a proper com-
bination of Calomel and tartar Emetic
ay (30 gr of the former to 10 of the latter
- ℥j) of water ~~[illegible]~~ spoon full to be
ken every 15 minutes untill free emesis
kes place) will cure any case of Croup
ken taken in time unless in its highest
ate of inflamation may object to the
e of this medicine on account of the
fect which it produces on the salivary
lands Dr Potter says that in many hun-
dred cases which he has seen he has

never met with one of salivation
sometimes makes the mouth run a little
that soon disappears - in a torbyrid state
the bowels and stomach it more
fectual than any other medicine in acc
mulating diminished excitabillity —
e warm bath is also an usefull auxili
y in the treatment of this disease after
e reduction of the inflamitory action
more particularly so when the skin
y and rough by producing perspirat
on and assisting the action of other
medicines — Seneka has been considered
a specifick in this disease it is
ithout doubt a medicine of very con
siderable powers but by no means pays
ed of the virtues which have been as
ribed to it by Archer and some others
the begining of the disease it is objectio
able on account of its stimulating
moments but after the subsidance

inflamation it is a valuable remedy
for the releaf of the dry cough and
difficulty of breathing after the disease
has been subdued no medicine is more
effectual - it has been recomended
that after all the usual means have
been used without sucess that we
should resort to an operation which
is called ~~Bron~~ tra chotomy it consists in
cutting down between the cricoid and
thyroid cartilages in this manner prevent
the patient from sufication

Would you explore the secret haunts
of Omnipotence and find for the intel-
-lect its widest horizon, seek the ex-
-alted regions of Chemistry ——

No one who has ever duly dwelt on the stupendous works of the Divine Author of the Universe, and contemplated as they successively presented themselves to his intellectual vision, the various laws by which the different parts of this immense system are preserved in constant harmony, but must have recognized in a variety of the grandest phenomena the element which is about to fall under our consideration — and when he has traced it through some of its operations, marking it now in the fiery jet and terrific roar of the convulsed volcano, now blasting all nature from her hyperneal

slumber, slipping off the downy vestment that had protected her from the deadly blast, magically to clothe her in the splendor of her vernal loveliness — and now inspiring health and activity to the animated world, he must at once be struck with its interest and importance. Still, though by these vast and imposing processes we are forcibly and fully impressed with the existence and power of this useful agent in creation, there are other more familiar cases, in which its properties are made known, and exhibited to us. But with these properties we are made acquainted only by its action upon matter in general; we have scarcely an idea of its specific character, which is so elusive and intangible, that the closest investigations and utmost scientific scrutiny have resulted in a theory, which though ingenious, fascinating, and

persuasive, is by no means conclusive. At this we cannot marvel, when we reflect that it is only one of our five senses, with which the matter of Heat has made direct acquaintance, viz. that of touch. To all the others it is entirely unknown, and never comes under their cognizance except mediately, by impressions received from material objects subjected to its influence. The eye for example can detect the presence of heat in a mass of ice, and discover to us one of its attributes, that of opposition to the attraction of aggregation, only by observing the liquefaction of that ice, — yet even this is a kind of second hand information, which could not have been communicated by the eye had not the sense of touch been first consulted. It is clear then, that our first ideas, imperfect as they may be in regard to our subject, are excited either by touching

those bodies that may be charged with it, or by experiencing the sensation of heat direct from its invisible self - by which ever of these means we are apprized of its presence, we in common language convey our sensations by the terms heat and hot, as for example, "in the sun there is much heat," "the season is excessively hot." But it is evident that these expressions refer to nothing but sensation, without in the slightest manner directing the mind to the cause of those sensations which have been obliquely adverted to. In order then to have as clear an understanding as possible, and facilitate the investigation of this abstruse subject, Chemists, after adopting and rejecting various phrases at different periods, have agreed to call that invisible and subtle principle to which are ascribed all the phenomena expressed by the terms heat and hot, with all the chemical changes attributed to the action of heat, — Calone.

In future therefore we will understand by Calorie a thin, invisible, and penetrating fluid, pervading universal nature, and producing all those effects, physical, chemical, and vital, which are commonly referred to heat — But although Calorie is decidedly more conformable to the language of philosophy than the phrase heat, the latter though not used with the same acceptation, is in much more general favor, we will therefore attach to it the same idea contained in the former, and employ them indiscriminately throughout the following sheets.

When we follow the element Calorie through all its diversified actions and associations, we discover what doubtless could little have been expected, that it is not always in the same condition, but exists in connection with bodies, not only concealed from our senses, but differently

dispose under this concealment — we would deceive
ourselves greatly for example, if upon touching a
cold body we should pronounce it destitute
of Caloric; hence it became necessary to the ready
conveyance and easy comprehension of our sentiments,
upon the subject, that to caloric should be ap-
plied different appellations, or that the term
should be variously modified according as it
was found in the one or the other of these con-
ditions; we consequently meet with "Heat of
Temperature," "Latent Heat," "Specific Heat,"
"Absolute Heat" and "Combined Heat."

As it is our design to treat of but two
of these, the "Heat of Temperature" and "Latent
Heat" it would here be unpleasant to give
each its definition — When we view the almost
innumerable field presented by these different
points for investigation — a field not unbodden

dust upon which minds matured by age and strengthened by experience, have pondered and paused, and to the vast expanse of which some of the brightest stars that ever ascended the horizon of science have been like such lights in the midnight firmament; we feel that, independent of any other consideration, two divisions of the subject, the Nature of Caloric, and Spontaneous Evaporation, will be a sufficient task for our feeble powers:—

Nature of Caloric.

In relation to this point, the question upon which a spirited contest has long revolved, is, whether the cause of all the phenomena proper to heat be material, or whether they be effects consecutive to a mere motion among the particles of matter?

Among the most conspicuous of those philosophers who maintained that heat was an effect of intestine motion among the particles of bodies, were Bacon, Newton, and Rumford, with the former of whom this chimera originated— We cannot withhold the expression of our regret, that the name of Davy claims a place among the proselytes of Bacon, and perhaps we could not offer a more faithful or clearer expose of this idea, than by transcribing his own language— "It seems impossible to account for all the phenomena of heat, if it be supposed that in solids that the particles are in a constant state of vibratory motion, the particles of the hottest body moving with the greatest velocity, and through the greatest space, that in fluids and elastic fluids, besides the vibratory motion, which must be conceived greatest in the last, the particles

have a motion round their own axes, with different velocities, the particles of elastic fluids moving with the greatest quickness, and that in ethereal substances, the particles move round their own axes, and separate from each other, penetrating in right lines through space! — Temperature may be conceived to depend upon the velocities of the vibrations, increase of capacity on the motion being performed in greater space, and the diminution of temperature during the conversion of solids into fluids or gases, may be explained on the idea of the loss of vibratory motion, in consequence of the revolution of particles round their axes, at the moment when the body becomes fluid, or uniform, or from the loss of rapidity of vibration in consequence of the motion of particles through greater space!!! —

So far as Sir Humphrey Davy speaks of motion, which is the basis of the opinion we comprehend him; but when he

comes to modify this motion in order to account for the various ways in which caloric is associated with bodies, his language, to us, is vague in the extreme and has the appearance of those efforts, men feel themselves sometimes constrained to make, in defence of an opinion they have espoused they know not why.—
But let us examine how much of philosophy there is in this idea, and try whether we can reconcile it with the laws of motion.——

Amongst all the corollaries that have been deduced from close study and accurate experiments relative to the motion of bodies, no one is better established or can be more clearly demonstrated, than this "that upon the collision of two perfectly elastic bodies, action and reaction, are Equal."—
One out of many other proofs of this we find in the experiment with the ivory balls, which being suspended so that they exactly touch, if one of the extreme balls be raised and then let fall, it strikes the one next to it, and remains at rest together with all the others, except that at the

opposite extreme, which immediately flies out, and describes an arc so nearly equal to that of the ball which gave the impulse, that the difference is not appreciable.

Our Atmosphere is a fluid constituted of particles immeasurably minute, this fluid is elastic, consequently its particles are elastic. Hence any motion imparted to one stratum of the Atmosphere, ought to be communicated to another, tho' far distant, which in case of sound we find to be the fact— but this transmission of impulse ought to be instantaneous, and so it would be were not the atmosphere imperfectly elastic. We will now see Law for the phenomena of heat come under this law.

Suppose an observer standing at one End of a confined apartment, where the air is perfectly quiescent, if a plate of iron red hot, should be presented at the opposite extremity, he would be sensible of that effect usually as-

called to Caloric—Now according to Bacons
theory, which Sir H. Davy seems disposed to vin-
dicate, this heat suffered a violent vibration among
its particles, causing in it what we term heat. This
vibration was communicated to the particles of the
intervening air, arranged in an infinite number of
lines resembling the row of ivory balls, which pro-
pagating it to the observer, caused in him the
sensation of heat. Granting the fundamental
proposition of Lord Bacon, that the particles
of heat bodies vibrate, and among the atmospheric
particles as possessed of perfect elasticity, the trans-
mission of impulse ought to be not only instanta-
neous, as demonstrated by the balls, but its force
should be entirely preserved.

Mr. Leslie in the prosecution of his ex-
periments on Radiant heat, observed that there
was no interval of time between the removal
of a screen placed before a hot body

and the use of a Thermometer in the focus of an opposed mirror, and thus we perceive that the communication is instantaneous— But this fact could only prove the correctness of Bacons views upon two assumptions, first, that the particles of hot bodies vibrate, and secondly that the air is perfectly elastic. The former of which is altogether gratuitous, and the latter is not the fact— It is thus to be passed over without further notice

It is the second of the two abovementioned laws of elastic bodies that bears with more importance upon our subject— according to this law the vibrations of those particles of air immediately adjacent to the body of the observer ought to be nearly as rapid as those of the stratum of air contiguous to the hot plate, and then consistently with the opinion of Sir H. Davy,

"that the particles of the hottest bodies move with the greatest velocity." or in other words, heat is directly proportionate to velocity of vibration. The effects of heat should be as apparent at the distance of twenty feet from the plate, as at ten, which we know is not the case, for ~~though~~ caloric though it may be perfectly sensible at ten feet, would at the distance of twenty scarcely make us conscious that a heated body was present.

In objection to our argument it may perhaps be urged, that the primary impulse would be preserved undiminished, and that the temperature would be found in regions far distant from the source of heat, equally high with that in its immediate neighborhood, were it not for the imperfection of the atmospheres elasticity, which causes a loss of motion.

That the atmosphere is not a perfectly elastic fluid, every philosopher is aware, if from no other circumstance than the interval between the flash of distant lightning, and its consequent thunder. But when we consider the rapidity with which eliminated heat is diminished in traversing even a limited portion of air, and compare it with the vacuance of the atmosphere from complete elasticity, we shall be convinced that they are by no means commensurate; and agree that any attempt to invalidate what we have here advanced, upon such grounds, must amount to nothing, more than sophistry the most abject, leaving us freely to fall on to the fair and legitimate conclusion, that the opinion of Lord Bacon and his followers upon this subject being altogether incompatible with the laws of motion, is not only unsatisfactory, but essentially wrong; yet should not this discover sufficiently, (one must say) the absurdity of such an idea, a more di-

not appeal to experience well.

Almost every one is acquainted with the double convex lens, and has observed that if it be presented with its plain parallel to the suns disk, when unobscured by clouds, a point may be found somewhere in its inferior axis, so extremely hot as to fire the greater part of combustibles, — How shall we explain this? Lord B. would say that the caloric vibrations of the sun were imparted to its ethereal regions; from these they passed to our atmosphere, from which, being caught by the surface of the lens, they were transmitted to the air beneath it, and thence to the combustible, causing the phenomena of combustion!!!

Now, even were we to admit that this accounts for the appearance of heat, beneath the lens, it does not explain its accumulation — it does not tell us why so much

heated point can be found above the lens — how then is the concentration effected? we surely cannot be so blind to philosophy as to say that the inferior surface of the lens occasioned a convergence of vibrations; on the contrary, bodies when put in motion take the direction of the impelling force, continuing in such direction until opposed by some resisting body — Suppose the whole surface of the lens to be in a state of vibration; it is evident that whatever impulse it might give to the contiguous atmospheric particles, moved be in lines perpendicular to its curve, and these would all be not towards a focus, but divergent — Again — we will go further, and for a moment grant that the sun is no more than an immense vibrating something — causing a series of vibrations through ether, atmosphere, and lens, by the latter of which they are collected to

a focus; a second look will detect an objection still more formidable and unanswerable than any yet advanced.

If is motion among the particles of bodies, say these enemies to Caloric, which occasions the phenomena of heat; we should therefore expect that whatever body is capable of giving to another the property of causing these phenomena, has its particles in a state of motion — the integral parts of the lens must of consequence vibrate — but then it would be exceedingly hot — whereas the thermometer tells us that its temperature is in perfect equilibrium with the surrounding medium!! — Thus we see, the chain of vibrations is broken — where shall we find the connecting link?

But we have before stated, that in opposition to these views, another theory has been established; which is embraced and supported by the majority of scientific men.

It concludes that "the cause of all the effects attributed to heat, is a specific kind of matter, existing in the form of an extremely subtle fluid, first named by Lavoisier, Caloric, which by associating itself in a variety of ways with all matter, gives rise to the phenomena of heat"—

As might be expected, those who advocated the doctrine of vibration, beg an immediately to cause of the merits of this theory, and among the most conspicuous were Pictet and Count Rumford.— The latter of these gentlemen, having observed that a given portion of water, when soon raised from the ordinary temperature of the atmosphere, up to boiling heat, when the process of boring a cylinder of brass was conducted in it, concluded that nothing but motion could cause such an effect, "because," says he, "any thing which an insulated body or system of bodies can furnish without limitation, cannot possibly be a material substance"—

How futile this objection is, we may perceive at a glance, as it is plain that whatever force it might have, depends entirely upon a position which we cannot accede to; because it is not only presumptive in the first instance, but it has been invalidated both by observation and experiment. Dr. Black, for example, while engaged in his researches upon Latent Heat, observing a Black-Smith light his match with the heat produced by the rapid percussion of a piece of iron, had some conversation with the man, and among other things learned from him that after hammering it for awhile, all the perseverance in the world must keep it hot or raise its temperature again, unless it were first put into the fire and permitted to cool, when the operation could be repeated with equal success.

Concurrent with this observation, and very conclusive in their character,

were done experiments conducted with great ac-
curacy and caution, by Berthollet and others, with
the view of ascertaining the comparative rise
of temperature upon submitting different pieces
of Metals to percussion — This is not the question
with us however, we are only desirous to know
what in any case may relate to the gene-
ration of Friction or percussion cause an indefinite
extrication of Calorie"? — or does the temperature
of a piece of metal under this operation fall,
rise, or remain stationary, upon the continu-
ance of the process — The metals employed, were
Gold, Silver and Copper, and the blows
were given by a coining machine — it is
unnecessary to examine the case of each metal,
one is sufficient for our purpose, — we will
therefore be content to remark the effects
upon copper. —

Upon the first blow the temperature of a piece of this metal was elevated 17.44° the second blow raised it but 7.00° and the third only 1.46°, proving that the rotation of caloric diminishes in a ratio so rapid, that it would soon reduce it to nothing, when there would certainly be a diminution rather than an increment of heat—

Hence we conceive that the very basis of Count Rumfords objection being proved fallacious, no confidence should be given it—

But the theory of <u>Caloric</u> has not reigned without being assailed in another way—which we here notice on account of its whimsical character, if for nothing else— authors however have given the exciting cause a place in their works, and it has engaged the minds of students; upon this score therefore it claims an attention:—

If the cause of heat be material, and the opponents to our theory, bodies ought to become heavier or lighter according as they gain or loose caloric, and in order to put this to the test, experiments were instituted by De Luc, Hodges and others; these are considered useful, because they furnish a striking commentary upon the enterprising spirit of man, of which we will be sensible when we consider that they were nothing more nor less than attempts to weigh Caloric! One will serve as a sample.

This experiment made by Hodges was brought forward with pretensions to prove not only that bodies lost no weight upon reduction of temperature, but that they actually became Lighter! - it consisted in putting into a glass globe three inches in diameter and of a given weight, a known weight of water, and hermetically sealing the globe, which

was dried as perfectly as possible it weighed
was noted at the temperature of 89°. The whole
of the water being then frozen by frigorific
mixtures, it was found to weigh $\frac{3}{16}$ of a grain
more than when fluid, though its temperature
was drawn to 10°.

Now, though we by no means approve
of that meagre kind of argument which
in every instance amounts to nothing more
than a wily subterfuge, do <u>scrupulous</u> Love
seem the enemies of the theory of <u>Caloric</u>
that we must meet them upon their own
grounds; we would therefore remind them
that heat has been proven an antagonist
of <u>cohesive attraction</u>- That <u>cohesive attrac-</u>
tion and gravitation are only modifica-
tions of the same law- consequently that

Heat opposes gravitation – therefore the result of Hody's experiment is no more than what we might have expected, since the water in being cooled, parted with a power that depended its tendency to the earth – besides it should be recollected, that even were the atmosphere at 32° the globe being at 10° or as 22° degrees colder, which cooling the atmosphere immediately around it, caused it to deposite, tho' invisibly, a portion of the hygrometric vapor contained at all temperatures, and this could very easily amount to $\frac{2}{10}$ of a grain, if not more

But it is likewise objected that the reverse of the experiment tends equally to prove the immateriality of the cause of heat – that the heating of bodies, or the addition of caloric to them makes no alteration in their weight – whence it ought to be augmented.

A little impartial reflection, we think, will make the imbecility of this argument equally apparent with that of the other. We

will for a time discard the idea that Caloric is inimical to attraction, and look upon it as a material fluid; still when we meditate upon its extreme tenuity, all cause of surprize at these results disappears; moreover we will adduce a case under common observation, which must make them quite reconcileable to an unprejudiced mind.

If into a large apartment a pound of Camphor be suddenly introduced, and the air agitated, in a very short time its odor would be perceptible in any part of the room — this odor is confessedly and demonstrably owing to the volatilization of the camphor itself; which being diffused through the air, is detected by the olfactory nerves; the pound of camphor must therefore have lost something; nevertheless, the nicest balance that human ingenuity could ever devise, we will answer for it, could not show us the loss — and yet were all

all the camphoric vapor contained in the apartment, collected and condensed into a solid body, the size of a musket ball, and naturally without smell, there cannot be a doubt that it would acquire the power of producing an effect in regard to odor, correspondent to the rise of temperature upon the addition of caloric — How then, consistently with reason could we expect a body to become more ponderous upon the introduction of a substance so incomparably subtle, as is caloric; which permeating the densest matter in creation, makes its way through every barrier, while the exhalation from camphor may be easily corked up in a bottle?

Thus far upon this point we have been engaged, we will not say how successfully, in combatting the attempts to undermine the theory of caloric; our efforts therefore, could afford it but a negative support. It

now remains to review some of those arguments which more positively and directly demonstrate its soundness, and which in our mind, whether taken collectively or individually, will ever prove to its opponents an impenetrable ægis.

In the first place then, we know nothing except by its properties—which so invariably establish the character and distinctive marks of different kinds of matter, that we are often compelled to admit the existence of substances, giving them name and description, merely on observing their effects on other bodies, although they are completely veiled from direct perception—For example, we conclude that oxygen Gas is present, because the introduction of Nitric Oxyde, occasions the formation of nitrous acid vapor, which appears in red fumes—

Concluding that all are sufficiently familiar with the above truths, we conceive that to establish the materiality of caloric we have only

to demonstrate its obedience to the acknowledged laws of matter; this therefore shall be the perfect of what follows.

A formidable body of observations, experiments and arguments are in array for the accomplishment of our design, but so determinate is the character of the majority, that it would be redundant to adduce more than one or two, which we select upon account of their superior validity.

Herschel, that companion of the planets, in the course of his astronomical observations, remarked that whenever his glasses were so deeply colored as to arrest the progress of the solar rays, they cracked and fell into pieces - suspecting, we presume, that this proceeded from some peculiar relation between light and heat, he made experiments to ascertain the heating power in each ray of the prismatic spectrum - the result of which was, that the violet ray was the least caloric, the red ray the most so - from

which we deduce the corollary, that as frangibility
and the power of Exciting are inversely proportionate
to each other the latter diminishing as the for-
mer increases — and as the strongest illuminating
rays are in the centre of the Spectrum, where the
Heat is trifling in comparison with the red ray,
we have abundant evidence that light and the
cause of Heat observed very different laws, or are
at any rate affected by the same law in dissimilar
ways — But what is most interesting to us is, the
fact that the greatest heat exists about an inch
beyond the Spectrum, where no color is to be
found, and continues to affect the thermometer
an half inch further.

In relation to this effect, there have
been entertained two views at least, which de-
mand our attention. According to one, Light,
in passing through the prism and all other
diaphanous bodies, suffers not only refraction,
but likewise a peculiar change by which it

is somehow or other endowed with the power of causing the phenomena proper to heat — the other idea is, that the solar beam is composed of light and heat — that heat of course is eliminated by the sun in rays which are less refrangible than light or either of its components, and that the prism in decomposing the luminous beam therefore exhibits the greatest heat in connection with and a short distance from the least refrangible ray, the red.

Whatever may be thought of these two explanations, certain it is that neither of them militate in the least against the materiality of Caloric, but on the contrary both suppose it to be a subtle fluid — It is not questioned how Caloric is formed — whether from a modification of light, atmosphere, or any thing else — we only insist that it is a species of matter, which so long as it merits the name

of Caloric, possesses properties altogether foreign to those of light.

But the idea that Caloric is merely a modification of Light, opposes the belief that it is an original and distinct species of matter — It has occurred to us however, that it is directly counter to reason, and harshly dissonant to sound logic — that it looks more like hypothesis than philosophy, and for these reasons:—

To the unfortunate being whom Nature has granted but a semi-existence by denying him the joys of vision, Light is equally imperceptible and incomprehensible; it is consequently only known by its impression upon the retina of the eye — When the thermometer is passed beyond the red ray, but in a line with the Spectrum, the mercury vises, yet the cause of such vise is wholly invisible; upon what grounds then, but those purely hypothetical, is it believed that light is

concerned in the case? — We surely have no evidence that Light is present — the effects of Heat alone are ~~present~~ observable — but is said that this heat was once light upon which the prism has worked a metamorphosis — Let us see how this will stand the test of experiment.

In the process of Mr. Leslie's researches into the laws of Radiant Caloric, he was desirous of ascertaining how it was affected in its passage through different media, — to this end, a body emitting both light and heat was placed in the axis of a concave parabolic mirror, while the bulb of a thermoter occupied its focus, and gave evidence that caloric was received — things being thus conditioned, a sheet of very transparent glass was interposed between the hot body and the mirror, when the mercury instantly fell many degrees, which effect increased as the screen was approximated to the mirror, till

every sign of Heat in the Focus disappeared.
Was this owing to the interception of Light? most
positively not — for though the thermometer did
not confess the presence of Calorific, its bulb
was as brilliantly illuminated as ever. In addi-
tion to this, M. De La Roche has shown, "that
a thick glass though as much or more pene-
able to light than a thin glass of more quality,
allows a much smaller quantity of radiant Heat
to pass" — How comes this? — the glass screen has
evidently caused a disappearance of Calorific from
the Focus of the Mirror, yet if the Heat in the
Focus proceeded from nothing but a transmu-
tation of the light, effected by the surface of the
Mirror, the thermometer should have remained
unaltered; for even if we allow that the glass
detained half of the light, the mirror had still
some to work upon. Why then did it not
convert it into Heat?

From these considerations and others of equal force we are compelled to reject the idea of the essential identity of Light and Calorific and to adopt the opinion that Light in every instance at least where it is eliminated in consequence of the elevation of temperature, is compounded with Calorific, a distinct fluid; and that when Light passes through any medium if the effects of Calorific manifest themselves separately from those of Light, it is owing to a dissociation effected by that medium.

But the question returns, what evidence have we that Calorific is material?—

Certain it is that the foregoing remarks have no direct tendency to that conclusion demanded; yet is equally certain that we have commonly had in view the transmission of something through a material medium — In other words, all that has been said rests upon that point in Dioptrics, termed the refraction of Light."

an effect from the rationale of which we are to derive our deductions in regard to Caloric. So few, if any, are they who now pretend to dispute the materiality of light, that we are not afraid of error when we assert it to be universally believed. We have then seen from the experiments of Leslie, Herschel, De La Roche, &c. that Caloric obeys implicitly the same laws that preside over the motions of Light — yet were we simply to say that Caloric is material, because it thus resembles Light, which is known to be material, reason would be unsatisfied, and the enquiring mind would immediately ask, wherefore is Light considered material? — To answer this interrogatory we are compelled to wander into optics, and we do not hesitate at the digression, as it must be allowed that, if Caloric is operated upon by ponderable matter in a manner exactly resembling nearly all the changes produced upon Light, and

the materiality of light being an influence flowing from arguments based upon such changes, we have only to display these arguments, prove the proposition in relation to light, and Caloric irresistibly takes its place under the head of matter.

Light is admitted on all hands to be some thing radiated in all directions and in right lines from every lucific body, which is evidenced by its rigid observance of a law in Projectiles, viz, that of reflection, a circumstance not only arguing its process in right lines, but with its other modifications, refraction and inflection, giving ample illustration of its materiality; and this by virtue of a corollary, drawn from the accepted rationale of these particular effects:- the integrity of which rationale is to be found in the well established, or I might say, self-

evident proposition, that "Matter can act upon matter alone" for the idea of attraction took its rise from matter, and would vanish with its extinction — but in what do these effects upon Light consist?

1st. When the sun's light is transmitted through a small hole into a dark apartment, and impinges on a Horizontal plain mirror, it is "reflected" i.e changed from a descending to an ascending direction, making exactly the same angle as would an ray back projected in the same original direction against a marble surface — this reflection is caused by an impulse of the mirror upward upon the parcel of light that strikes it, which must according to the first position be material.

2d. — When a ray of Light passes from one

medium into another of greater density, it suffers "refraction". For example, if the mirror in the above instance were destroyed, by removing the amalgam that coated the lower surface, and thus rendered transparent, the light would, instead of being reflected, pass through, though not without a change in its direction, - it would be bent downward, or towards a line perpendicular to the plain at the point of incidence. Now it is impossible to conceive how this refraction could be effected, unless by attraction, which must be exerted by the denser medium, in lines perpendicular to its surface. But upon what is this power exercised? - Surely not upon immateriality, for we have seen that "matter can attract and act upon matter alone" hence we have the legitimate inference that

"Light is material" — There is yet another case, similar to the latter, but if possible, more striking. Whenever a ray of light passes a tangent to the surface of any species of matter, it is diverted from its course towards the attracting body — this is termed the "inflection" of Light — We have a familiar example of this — when the sun's rays pass through a chink between two planks of a fence or door, the line of light that falls upon a surface opposite, is invariably broader than the opening through which it passed; proving that the rays were diverged by the attraction of the wood.

Again, there are in nature, and produced by art, many bodies both solid and fluid, possessing the property of absorbing

or luminating light, according to circumstances — of these, Nature furnishes the Diamond, At all the solar hypothesis.

Thus, being of opinion that the materiality of Light is placed beyond dispute, it will be sufficient for our ultimate purpose, to mention that there is a multitude of experiments and Natural phenomena, to demonstrate, that bodies, when exposed to the same causes, undergoes the very changes, that constitute the basis of those arguments urged in proof of the materiality of light — that Caloric, though it has not been decomposed, is absorbed by bodies, and again rejected by radiation and conduction — that it suffers reflection, refraction, and inflection, observing precisely the same laws as preside over similar changes of light,

i. e. its angle of reflection equals that of incidence. It is refracted when penetrating a denser medium, toward the perpendicular, and its inflection is toward the body it touches. Hence, we consider ourselves warranted in asserting it to be perfectly consonant with unsophisticated philosophy and sound logic to conclude that "Caloric is a fluid of inconceivable subtility, possessed in different proportions by, and obedient to all the laws of matter."

This brings us to the close of our remarks upon the nature of Caloric - and now, when we look back upon the steep we have attempted to mount, and contemplate the barren and craggy cause over which we have just barely clambered - though its misty summit is yet far above us, we tremble at

our enterprise — But Science has not deserted her votary in time of danger, for on a nearer view, we find ourselves firm upon the rock of Truth, upheld by the tutelary hand of Experience.

Yet as the eye of the Traveller, when he reaches some favorite site upon the mountain's slope, is enabled to discern beauties before shrouded in that distance which now "lends enchantment to the view" — so from our present position, — after having unfolded the nature of Calorie, we are prepared to look into the more occult character of all those natural processes which depends upon its existence, — but this, the circumscribed limits of an inaugural thesis forbid, compelling us to confine our examination to some one of them; therefore, as it constitutes one of

the most interesting, and important parts in the grand concert of Nature, we shall select,

Spontaneous Evaporation.

Amongst all the laws that preside over and direct the countless processes steadily going on in the Grand Laboratory of Nature, there is no one, perhaps, to which is assigned a more important and extensive office than Caloric or Heat— But upon attempting a survey of its multifarious effects, we know of none in which it appears in a more interesting light than that of Spontaneous Evaporation— Before entering at large, however, upon an examination of its use in the economy of Nature, it is proper to mention that this term has been adopted in contradistinction to Vaporization

and Simple Evaporation – the two latter usually signifying an effect consequent to the artificial application of Heat, while the former is always a Natural process.

Water, for example, under the medium pressure of the Atmosphere, at the temperature of 212° always undergoes ebullition, rapidly assuming at the same time, the form of vapour – this is Evaporation – Evaporation is its conversion into vapour by the application of superior degrees of heat – But by Spontaneous Evaporation, we are to understand, that process by which almost every liquid, but especially the whole mass of water on the Globe, is perpetually rising insensibly into the air, unaided by Art, and seemingly unattempted by the lowest temperatures.

To the mind of Philosophy's votary, a-

customed to lift the curtain of Natures sub-
lime drama, and explore her secret springs, the
subject that at present engages our attention,
is familiar under many forms—yet to one who
has never viewed the varied beauties of creation,
but with the eye of superficial observation, it
will be necessary to introduce it by experiment.
Let some water then, be placed in any vessel cal-
culated to contain it, and exposed uncovered to
the atmosphere, provided the vessel be rather broad,
and permitted to stand undisturbed, but a short
time will elapse before the entire disappearance of
the water—Now, as in every instance where an effect
is perceived, the cause is immediately sought for,
so in this we are led to the inquiry, by what
agency and Law is this phenomenon accomplish-
ed?—The answer to which will consist of nearly

all are Love to pay upon the subject.

It has already been hinted that expansion is one of the effects attributable to Caloric. It now remains to be observed, that the infinite variety in the physical conditions of matter is wholly dependent upon its existence— For Philosophers have agreed, (and upon good grounds too) that the attraction of aggregation stands as an unit— a fixed and inflexible law, extending its dominion over all matter, with a constant tendency to consolidate it into one immoved, solid, and infinitely hard mass, which must inevitably take place, had not the wisdom of Omnipotence given it an inseparable associate, Caloric, evermore its antagonist, repressing and modifying its energies, and according to its intensity, giving us the